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RECAP

ANNUAL REPORT

OF THE

STATE ENGINEER AND SURVEYOR,

FOR THE

Year 1856.

~~~~~  
Transmitted to the Legislature January 15, 1857.  
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ALBANY:

C. VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,
No. 407 Broadway,
1857.

State of New-York.

No. 60.

IN ASSEMBLY, JAN. 15, 1857.

ANNUAL REPORT

Of the State Engineer and Surveyor, for the year 1856.

STATE ENGINEER AND SURVEYOR'S OFFICE, {
Albany, January 15, 1857. }

To the HON. DE WITT C. LITTLEJOHN,
Speaker of the Assembly:

SIR—The State Engineer and Surveyor respectfully acknowledges the receipt of the following resolution :

STATE OF NEW-YORK:
IN ASSEMBLY, {
Albany, January 12, 1857. }

On motion of Mr. Leavenworth,

Resolved, That the Hon. the State Engineer be requested at an early day to report to this House the amount which will be required for the completion of each of the works provided for by section three of the seventh article of the Constitution, as amended, after the expenditure of the nine millions of dollars authorized to be borrowed under said section."

In order to comply literally with the terms of the resolution, it would be necessary to prepare a statement, showing not only the total amount of expenditure required on account of work to be done subsequent to the first instant, together with the amount unpaid on account of liabilities incurred previous to that date, but also a statement showing the amount of means on hand, or in the treasury, that can be rendered available for these objects.

Not being in possession of all the information necessary for such a statement, I addressed the following communication to the Auditor of the Canal Department.

OFFICE OF THE STATE ENGINEER AND SURVEYOR }
Albany, January 14, 1857. }

HON. N. S. BENTON,

Auditor of the Canal Department:

DEAR SIR—Will you have the goodness to inform me at your earliest convenience, of the total amount of funds realized, or probably to be realized, from the loan of \$9,000,000 authorized by the amendment to the Constitution.

Also the amount that has been or is to be expended from said fund on account of the enlargement and completion of the canals for liabilities incurred prior to 1st January, 1857.

Also the amount that may be considered as applicable to the payment of liabilities on the same account, to be incurred subsequent to the 1st of January, 1857, including percentage unpaid on work done previous to 1st January, 1857.

Yours, respectfully,

SILAS SEYMOUR,

State Engineer.

I have received no answer to the above communication except a verbal one, that the Auditor could not furnish the information asked for.

I am therefore compelled to refer the Assembly to the Annual Report of the State Engineer, which I have the honor to transmit herewith to the Legislature, which will be found to contain the substance of the information asked for in the resolution, although the results have been arrived at in a different manner, and with quite as great accuracy, provided it be assumed that the nine million loan was intended by the Constitution to apply only to the payment of liabilities to be incurred subsequent to 31st December, 1853.

I am, very respectfully,

Your obedient servant,

S. SEYMOUR,

State Engineer and Surveyor.

REPORT.

OFFICE OF THE STATE ENGINEER AND SURVEYOR, }
Albany, January 15, 1857. }

To the Hon. the Legislature of the State of New-York:

The State Engineer and Surveyor, in obedience to law, has the honor to submit herewith his

ANNUAL REPORT FOR THE YEAR 1856.

The law requiring the State Engineer and Surveyor to make an annual report to the Legislature, is in the following words (chap. 377, Laws of 1850).

“SEC. 15. The State Engineer and Surveyor shall annually report to the Legislature, within twenty days after the commencement of its session, the number and compensation of the engineers employed, and that may have been employed during the preceding year, on the public works of this State, designating the number employed on each resident's subdivision, and the length and estimated cost of the work under contract, the amount done and remaining to be done at the contract prices on said subdivisions respectively. Said report shall also contain such other information in relation to his proceedings under this act, and such suggestions in the line of his duty in relation thereto as he may deem the public interest to require.”

I. The Engineering Department.

For convenience of construction, as well as of supervision, the canals of the State have been divided into three divisions, to wit: the Eastern, Middle and Western division. Each of these divisions has been under the charge and supervision of one of the Canal Commissioners, and of one division engineer.

The eastern division embraces Albany basin and the Erie canal, from Albany to Oneida Lake canal, a distance of 134.35 miles.

The Champlain canal and Glen's Falls feeder,....	78	"
Black River canal and improvement,.....	90.60	"
Reservoirs connected therewith,.....	12.95	"
	<u>315.90</u>	"

The middle division embraces the Erie canal from Oneida Lake canal to the east line of Wayne county,..... 68.58 miles.

The Chenango canal,.....	97	"
Oneida Lake canal,.....	6	"
Oswego canal,.....	38	"
Baldwinsville side cut,.....	1	"
Oneida River improvement,.....	20	"
Seneca River towing path,.....	5	"
Cayuga and Seneca canal,.....	22.77	"
Crooked Lake canal,.....	8	"
Chemung canal and feeder,.....	39	"
Navigable feeders,.....	3.35	"
Cayuga inlet,.....	2	"
	<u>310.70</u>	"
Making a total distance of.....	310.70	"

The western division embraces the Erie canal from the east line of Wayne county to Buffalo,..... 155 miles.

The Genesee Valley canal, including the Dansville side cut,.....	118	"
	<u>273</u>	"
Making a total distance of....	273	"

Making the whole length of the canals and public works of the State, 899.60 miles.

There have been six division engineers in the employ of the State during the past year, at salaries of \$2,000 per annum, for the time employed, to wit :

Mr. Daniel C. Jenne acted as division engineer upon the eastern division from January 1st until January 25th, when the Canal Board appointed

Mr. J. Platt Goodsell to the office, the duties of which he has performed up to the present time.

Mr. Van R. Richmond acted as division engineer upon the middle division from January 1st until February 18th, when the Canal Board appointed

Mr. Orville C. Hartwell to the office, the duties of which he has performed up to the present time.

Mr. Charles W. Wentz acted as division engineer upon the western division from January 1st until February 18th, when the Canal Board appointed

Mr. John D. Fay to the office, the duties of which he has performed up to the present time.

For the further convenience of the engineering department, the respective divisions have been divided into residencies, upon each of which a resident engineer, duly appointed by the Canal Board, is located by the State Engineer. The number of residencies upon each division should depend upon the amount and location of work in progress upon the division, so that the number of resident engineers is by no means necessarily constant.

There have been, during the past year, twenty-one resident engineers employed by the State, at salaries of \$1,700 per annum for the time employed, to wit :

Eastern Division.

Jno. L. Stephenson from January 1st to March 31st.
Stephen A. Charles from April 1st to December 31st.
Spencer Cole from January 1st to May 14th.
Wm. McCammon from May 15th to November 20th.
Wm. B. Taylor from January 1st to February 9th.
Thos. H. Bates from February 10th to December 31st.
Nelson J. Beach from January 1st to January 16th.
E. W. Butler from January 17th to December 31st.

Middle Division.

M. C. Fremyre from January 1st to May 14th.
Daniel Richmond from May 15th to December 31st.

Ogden Edwards from January 1st to February 9th.
Winslow L. Kidder from February 10th to December 31st.
M. S. Kimball from January 1st to December 31st.

Western Division.

Wm. H. H. Geer from January 1st to February 9th.
Ensign Bennett from February 10th to December 31st.
Richard Vernam from January 1st to December 31st.
Theo. Williams from January 1st to March 31st.
H. V. B. Barker from April 1st to December 31st.
R. H. Colburn from February 5th to December 31st.
Orville W. Story from January 1st to February 9th.
Hugh M. Severance from February 10th to December 31st.

The respective residencies are again divided into subdivisions, which are under the supervision of first assistant engineers, who are also appointed by the Canal Board, and who have in charge an engineering party, whose duty it is to locate, stake out, and measure the work for the contractors. The number of first assistant engineers should also depend upon the amount and location of work in progress upon each residency.

There have been during the past year forty-one first assistant engineers in the employ of the State, at salaries of \$4 per day for the time employed, to wit:

Eastern Division.

Robert Burns from January 1st to May 14th.
R. D. Shephard from May 15th to January 1st.
J. P. Green from January 1st to May 14th.
T. W. Spencer from May 15th to January 1st.
Duncan Campbell from January 1st to February 1st.
H. H. Bates from February 2d to December 31st.
J. H. Leddie from January 1st to April 7th.
Peter Hogan from April 8th to November 20th.
John L. Dodge from January 1st to February 17th.
John L. Dodge from April 8th to December 31st.
W. J. Keeler from February 18th to December 31st.
S. H. Sweet from January 1st to December 31st.
W. S. Nearing from January 1st to May 31st.

Henry Pettingall from June 1st to December 31st.
Charles H. Beach from January 1st to February 9th.
J. A. Watkins from February 10th to November 20th.
F. S. K. Russell from April 3d to November 20th.
E. W. Butler from January 1st to January 19th.
Jas. E. Willard from January 1st to December 31st.
Chas. F. Smith from January 25th to November 20th.

Middle Division.

D. R. Hartwell from January 1st to December 31st.
O. H. Bogardus from January 1st to May 14th.
M. Van Brocklin from May 15th to December 31st.
Wm. Crooks from January 1st to December 31st.
Howard Thompson from January 1st to December 31st.
W. B. Cooper from January 1st to June 30th.
A. McElroy from July 1st to December 31st.
Joseph French from January 1st to May 14th.
C. B. Hyde from May 15th to December 31st.
W. W. Jerome from January 1st to December 31st.

Western Division.

Thomas M. Sherman from January 1st to December 31st.
Henry Pomroy from January 1st to November 20th.
L. L. Nichols from January 1st to September 1st.
C. Q. Newcomb from January 1st to December 31st.
B. M. Hanks from February 10th to December 31st.
Thos. Goodsell from January 1st to December 31st.
Hathaway Hurd from January 1st to March 31st.
H. C. Ruggles from April 1st to December 31st.
S. A. Charles from January 1st to March 31st.
S. F. Gooding from April 1st to December 31st.
John A. Ditto from January 1st to December 31st.
A. C. Bishop from April 3d to December 31st.

The names, location and jurisdiction of the division, resident and first assistant engineers employed by the State at the close of the year 1856 and the commencement of 1857, are as follows :

Eastern Division.

J. Platt Goodsell, division engineer, Albany.
E. W. Butler, resident engineer, Schenectady.

Residency embraces the Champlain canal (with Glens Falls feeder,) and that portion of the Erie canal between Albany and the west end of Schoharie creek aqueduct.

Thomas H. Bates, resident engineer, Utica.

Residency embraces the Erie canal from the Schoharie creek aqueduct to the east bank of the Oneida Lake canal at Higginsville and the Black River canal, improvement and reservoirs.

R. D. Shepherd, first assistant engineer, Crescent.

Subdivision commences at lower Mohawk aqueduct and extends to the west side of State-street bridge, Schenectady.

T. W. Spencer, first assistant engineer, Schenectady.

Subdivision commences at the west side of State-street bridge, Schenectady, and extends westerly to the west end of Schoharie creek aqueduct.

Jno. L. Dodge, first assistant engineer, Fultonville.

Subdivision commences at the west end of Schoharie creek aqueduct and extends westerly to the west side of the Canajoharie aqueduct.

Henry Pettingall, first assistant engineer, Little Falls.

Subdivision commences at the west end of Canajoharie aqueduct and extends westerly to the west end of section No. 88, at Jacksonburgh.

S. H. Sweet, first assistant engineer Utica.

Subdivision commences at the east end of section No 89, at Jacksonburgh, and extends westerly to the west end of section No. 116, at Oriskany.

W. J. Keeler, first assistant engineer, Rome.

Subdivision commences at the east end of section No. 117 and extends westerly to the east bank of Oneida Lake canal at Higgins.

J. E. Willard, first assistant engineer, Lyon's Falls.

Subdivision embraces the Black River canal, and reservoirs connected therewith.

Middle division.

Orville C. Hartwell, division engineer, Syracuse.

Daniel Richmond, resident engineer, Syracuse.

Residency embraces the Erie canal from east bank of the Oneida Lake canal to the village of Jordan, the Oneida Lake canal and the Chemung canal, together with the feeders and reservoirs connected therewith.

W. L. Kidder, Resident engineer, Jordan.

Residency embraces the Erie canal from the village of Jordan to the east line of Wayne county, the Cayuga and Seneca canal, the Crooked Lake canal, the Chemung canal and the Cayuga inlet, together with feeders connected therewith.

M. S. Kimball, resident engineer, Fulton.

Residency embraces the Oswego canal, the Oneida improvement, the Seneca River towing path and the Baldwinsville side-cut.

D. R. Hartwell, 1st assistant engineer, Durhamville.

Subdivision embraces that portion of the Erie canal from the Oneida Lake canal to Chittenango.

M. Van Brocklin, 1st assistant engineer, Canestota.

Subdivision embraces the feeders and Cazenovia Lake reservoir.

Wm. Crooks, 1st assistant engineer, Jordan.

Subdivision embraces that portion of the Erie canal from Jordan to Port Byron.

Howard Thompson, 1st assistant engineer, Montezuma.

Subdivision embraces that portion of the Erie canal from Port Byron to the east boundary of Wayne county.

Alexander McElroy, 1st assistant engineer, Seneca Falls.

Subdivision embraces the Cayuga and Seneca canal.

C. B. Hyde, 1st assistant engineer, Salina.

Subdivision embraces that portion of the Oswego canal from section No. 1 to No. 15, inclusive.

W. W. Jerome, 1st assistant engineer, Fulton.

Subdivision embraces that portion of the Oswego canal from section No. 16 to No. 38, inclusive.

Western Division.

John D. Fay, division engineer, Rochester.

Ensign Bennett, resident engineer, Lyons.

Residency embraces that portion of the Erie canal from the east line of Wayne county to the west end section, No. 244, near Macedon.

Richard Vernam, resident engineer, Rochester.

Residency embraces that portion of the Erie canal from section No. 244, to Spencerport.

H. V. B. Barker, resident engineer, Albion.

Residency embraces that portion of the Erie canal from Spencerport to Reynale's basin.

R. H. Colburn, resident engineer, Buffalo.

Residency embraces that portion of the Erie canal from Reynale's Basin to the city of Buffalo.

Hugh M. Severance, resident engineer, Cuba.

Residency embraces the Genesee Valley canal, extending from the city of Rochester to Olean, Cattaraugus county, including the Dansville branch, and feeders connected therewith.

Thomas M. Sherman, first assistant engineer, Clyde.

Subdivision embraces that portion of the Erie canal from the east line of Wayne county to section 244, near Macedon.

B. M. Hanks, first assistant engineer, Rochester, N. Y.

Subdivision embraces that portion of the Erie canal from section 244 to Spencerport.

Thomas Goodsell, first assistant engineer, Albion.

Subdivision embraces that portion of the Erie canal from Spencerport to Albion.

H. C. Ruggles, first assistant engineer, Albion.

Subdivision embraces that portion of the Erie canal from Albion to Reynale's Basin.

S. F. Gooding, first assistant engineer, Lockport.

Subdivision embraces that portion of the Erie canal from Reynale's Basin to Tonawanda.

John A. Ditto, first assistant engineer, Buffalo.

Subdivision embraces that portion of the Erie canal from Tonawanda to the city of Buffalo.

A. C. Bishop, first assistant engineer, Cuba.

Subdivision embraces that portion of the Genesee Valley canal from Rockville, Allegany county, to Olean, Cattaraugus county.

The reports of the division engineers, which are annexed hereto, will show the number, period of service, and compensation of the engineers and others connected with the engineer department, who have been employed on each residency during the year 1856.

The total number so employed in the service of the State, including the division, resident, and first assistant engineers, at the close of the year and commencement of 1857, was as follows :

Division engineers,	3
Resident engineers,	11
First assistant engineers,	22
Second assistant engineers,	39
Levellers and surveyors,	35
Draftsmen and clerks,	32
Rodmen,	36
Tape and chainmen,	8
Axemen,	25
Inspectors of work,	34
	<hr/>
	245
	<hr/>

The expenditures in the Engineer Department during the year 1856, have been as follows :

Engineering proper,	\$233,489 52
Office rent, fuel, and lights,	5,675 19
Stationery, printing, and affidavits,	3,296 12

Postage, telegraph, and express,.....	1,251 37
Miscellaneous,.....	1,906 28
Total,	<u>\$245,618 48</u>

The following table shows the annual cost of engineering since the 1st of January, 1854, and the percentage of engineering expenses on the whole amount of work done in each year since that date.

Date.	Cost of Engineering.	Percentage on work done.
In 1854,.....	\$144,136 43	12.8
1855,.....	211,982 72	5.7
1856,.....	245,618 48	6.4

II. *The present condition and estimated cost of the works authorized, and supposed to be provided for by the amendment to the Constitution adopted on the 14th February, 1854.*

In reply to a resolution of the Senate, dated March 9, 1853, Mr. McAlpine (then State Engineer) submitted an "estimate of the cost of completing the Erie canal enlargement, and the enlargement and completion of the Oswego and Cayuga and Seneca canals, and of finishing the Genesee Valley and Black River canals," amounting in the aggregate to..... \$14,271,618 04
Add Mr. Clark's estimate of 1855, for enlarging

locks on Champlain canal, 264,291 49

Total from 1st Jan., 1853,..... \$14,535,909 53

Deduct expenditures in 1853,..... 1,052,111 99

Total amount,..... \$13,483,797 54
representing Mr. McAlpine's estimate of the costs from and after December 31, 1853.

The following is Mr. Clark's estimate, as submitted to the Legislature in his report for the year 1855: "Estimated cost of all the canals from and after the 31st day of December, 1853, the constitutional amendment having been sanctioned by the people in February, 1854.

Work done in 1854,	\$873,713 84
“ 1855,	3,524,898 03
Expenditures in the engineering departm't, 1854,	144,136 43
“ “ “ 1855,	211,982 72
Required to complete the Erie canal enlargement at contract price from and after the 31st of Dec., 1855,	\$4,823,727 98
Do Oswego canal,	837,311 59
Cayuga and Seneca canal, ..	321,133 96
Black River canal,	222,359 03
Genesee Valley canal,	96,989 30
Locks on Champlain canal, ..	132,185 16
	<hr/>
	\$6,433,707 02
Add for contingencies 10 per ct.	643,370 70
	<hr/>
	\$7,077,077 72
Engineering, land damages, &c., estimated,	1,300,000 00
	<hr/>
	8,377,077 72
Estimated cost of all the canals from the 31st day of December, 1853,	<u>\$13,131,808 74</u>

The following estimate is now submitted to the Legislature as the most reliable one that can be formed of the total cost (from and after the 31st December, 1853) of the “enlargement of the Erie, the Oswego, the Cayuga and Seneca canals, and the completion of the Black River and Genesee Valley canals, and the enlargement of the locks on the Champlain canal,” as provided for in the amendment to the Constitution adopted on the 14th day of February, 1854:

Work done in 1854,	\$873,713 84
Engineering, “	144,136 43
Land payments, “	82,946 44
Work done in 1855,	3,524,898 03
Engineering, “	211,982 72
Land payments, “	92,611 80
Work done in 1856,	3,864,014 95

Engineering, 1856,.....	\$245,618 48	
Land payments, "	134,987 11	
	<hr/>	\$9,174,909 80
<i>Estimated cost of work to be done after 31st Dec., 1856.</i>		
Erie canal enlargement,.....	\$2,936,483 43	
Oswego canal,	592,747 05	
Cayuga and Seneca canal,.....	272,038 52	
Black River canal,.....	142,742 60	
Genesee Valley canal,	55,600 98	
Locks on Champlain canal,	183,746 00	
Estimated cost of engineering, ..	258,902 00	
Estimated land payments required,	632,829 62	
	<hr/>	5,075,090 20
Total,		<hr/> <hr/> \$14,250,000 00

The total estimated expenditure to be incurred subsequent to 1st January, 1857, will be distributed among the respective works authorized by the Constitution as follows:

Enlargement of Erie canal,.....	\$3,525,223 43
" Oswego canal,.....	694,747 05
" Cayuga and Seneca,.....	331,238 52
Completion of Black River canal,	204,348 22
" Genesee Valley canal,.....	98,600 98
Locks on Champlain canal,.....	220,932 00
Total,	<hr/> <hr/> \$5,075,090 20

I would remark, in relation to the preceding estimate, as well as the estimate submitted by Mr. Clark in the report for 1855, that the 31st December, 1853, is assumed to be the point of time from or after which the payment for work to be done was provided for by the amendment to the Constitution authorizing the nine million loan, and that no part of this loan was applicable to work done previous to that date, it being assumed that the one and a half additional millions authorized by the same amendment was intended to provide the means of payment for all work done previous to that date.

If these assumptions be not correct there is no evidence of the fact in this department, neither is there any means of correcting the error.

The statement of work done and the expenditures in the engineer's department, for 1854 and 1855, are taken from the estimates of Mr. Clark, contained in his report for 1855. The land payments for the years 1854 and 1855, are taken from the reports of the Canal Appraisers for those years, and the amount for the year 1856, is the amount of awards for that year, as furnished by the Appraisers, the whole of which has probably not been paid.

For the details of expenditure incurred in 1856, and the estimated expenditures to be incurred after that year, I would respectfully refer the Legislature to the accompanying able reports of Messrs. J. Platt Goodsell, Orville C. Hartwell and John D. Fay, division engineers. These reports also contain information in detail, respecting the expenditures and condition of the work upon each residency of their respective divisions, and the statistical profile appended to each report affords an intelligent view of the condition of the work on the enlargement of the Erie canal.

III. Deficiency in means provided by the Constitution for completing the works therein authorized.

At the time of the adoption of the amendment to the Constitution, which was first proposed by the Legislature in 1853, it was supposed, that the surplus revenues of the canals together with the loan of nine millions of dollars (which was therein authorized) including premiums, and interest on premium upon said loan, would afford the necessary means for the completion of the "enlargement of the Erie, the Oswego, the Cayuga and Seneca canals, and for the completion of the Black River and Genesee Valley canals, and for the enlargement of the locks of the Champlain canal." It has been found, however, that the surplus revenue cannot, under the present provisions of the Constitution, be relied upon to afford any portion of the means required. The only available means, therefore, is the loan and the proceeds of the premium thereon, amounting in the aggre-

gate to say \$10,500,000. This amount deducted from the total probable cost, as shown in the preceding estimate, leaves a balance or deficiency of \$3,750,000.

In devising the means to provide for this deficiency, the Legislature can, undoubtedly, rely upon the two following propositions with the greatest confidence, to wit :

That a large majority of the people of the State are anxious that the canals should be completed within the shortest possible time, and that the surplus revenues of the canals will eventually be sufficient to pay the Canal Debt of the State, and probably the General Fund Debt.

The question, therefore, which presents itself to the consideration of the Legislature, is, *How can the surplus revenues of the canals be used as a basis to secure their completion, within the shortest practicable time ?*

If we are to wait for an amendment to the Constitution before any additional means can be obtained, it is evident that a suspension of two or three years must be incurred, and that the cost of completion will be largely increased : On the other hand, if we rely upon the policy of direct taxation to accomplish the object, it is to be feared that succeeding Legislatures may not be willing to carry out the policy to such an extent as to secure the rapid and uninterrupted completion of the canals.

I would, therefore, respectfully submit to the Legislature, whether it may not successfully combine the two theories, by *borrowing* of the people a sufficient amount to prevent a suspension of the work, and at the same time propose an amendment to the Constitution which shall provide the means for the repayment of the loan from the people, and also for the full and entire completion of the canals.

By levying a three-quarter mill tax (from which would be realized about one million of dollars), and at the same time authorising the Comptroller to invest two and a half millions from the Canal debt Sinking Fund in said tax, and in the premium on the loan of nine millions, we should have two and a

half millions with which to prosecute the work until the spring of 1858. An amendment to the Constitution, if proposed by the present Legislature, could then be finally acted upon by the people, which would provide for a loan of a sufficient amount to cover the present deficiency, one million of which should be sacredly appropriated to repay to the several counties the amount of the three-quarter mill tax, and the balance should be appropriated to the speedy completion of all the canals.

Another, and perhaps a better plan would be, to authorise a loan of only two and a half millions by the amendment to the Constitution, one million of which should repay the tax, and the remaining million and a half be appropriated to the completion of the canals, and providing for the balance by extending the canal loans from *eighteen* to *thirty* years; thus relieving the revenues of the canals from the great demands of the present Sinking Fund, and enabling the Legislature to appropriate a sufficient amount of the surplus revenues, together with such further loans as may be negotiated legally upon the credit of the Sinking Fund, to secure the early completion of the canals.

The foregoing suggestions are submitted with all deference to the Legislature, as merely the outline of a plan which would combine the two theories of *taxation and constitutional amendments* in such a manner as would *make the surplus revenues of the canals a basis to secure their completion within the shortest possible time*, and at the same time impose no permanent burthen upon the people. On the contrary, in voting for the amendment to the Constitution, the people would secure the restoration of the amount which they had advanced to the canals, and at the same time enjoy the consciousness of having saved the works from a suspension which would have involved an additional cost of hundreds of thousands, if not millions of dollars.

Whatever may be the action of the Legislature, however, with reference to providing means for completing the canals, either by taxation or opening the Constitution, it should not lose sight of the important fact that the State now has in its possession the sum of \$913,827.22, (as will be seen by reference to the accom-

panying reports of the division engineers,) which has been earned by the contractors on work already done, and which is held by the State as security for the performance of the contracts made under the provisions of act, chap. 329, Laws of 1854.

This money cannot in any reasonable view be regarded as belonging to the State, but it is the property of the contractors, so long as they comply in good faith with all the terms of their contracts.

It seems, therefore, but just to the contractors, that if a suspension of work is to take place, a provision should be made by the Legislature for the payment of the percentage thus retained, to those who may wish to cancel their contracts, upon receiving a final account (computed at relative prices) of all the work done up to the time of suspension.

IV. *The Management of the Canals.*

Under the last clause of the law requiring an annual report from this department, it may be expected that the State Engineer will give such information and make such suggestions in relation to the management and completion of the canals "as he may deem the public interests to require."

It will probably be admitted that the experience of governments, incorporated companies, and individuals, has settled the principle that, in order to manage the affairs of any enterprise, through the agency of others, successfully, the *responsibility* which attaches to an agent, must always be accompanied by sufficient *power* to render the agency effective.

An experience of one year has satisfied the State Engineer that this principle was not allowed to have its full force in the organization of the Canal Department, and I would therefore respectfully call the attention of the Legislature to the subject.

It is generally understood that a greater share of responsibility rests upon the State Engineer than upon any other member of the Canal Board, with reference to the qualifications of, and the performance of duties by, the engineers in charge of work under construction. Yet he has only a single voice or

vote out of nine members of the Canal Board, in the appointment of these engineers; and experience has shown that a state of things may exist, in which the voice and vote of the State Engineer can prejudice rather than promote the appointment of engineers of ability and integrity, unless he shall be one among a political combination which for the time being constitutes a majority of the Canal Board.

This important matter has been repeatedly referred to in the annual reports of my predecessors in office; and I will take the liberty of quoting from the report of Mr. McAlpine, for the year 1853, in order to show the views that have heretofore been entertained upon this subject by this department.

“It will be observed that, while the State Engineer is nominally placed at the head of the engineer department, and is considered by the public as responsible for the faithful performance of duty by his subordinates, he has no more influence in the selection of suitable persons for the higher officers than his eight associates of the Canal Board, and has no voice whatever in the selection of the minor officers.

“It will be conceded that no other officer of the government is as competent to judge of the professional qualifications of the candidates for appointment in this department, or less likely to be influenced by those considerations which generally govern the selection of political appointments. The experience of the past few years has led me to the belief that a change may be made in the manner of selecting the engineers, with advantage to the public interests.”

The same principle will apply, with perhaps greater force, to the appointment of superintendents of repairs. The Board of Canal Commissioners are held responsible for the safe and economical navigation and maintenance of the canals, and each Commissioner is held responsible for the division of the canals assigned to him. Yet each Commissioner has only a single vote out of nine in the appointment of superintendents to assist him, and upon whom he is to rely for the successful management of his division of the canals. And it may depend entirely upon

the political complexion of the Canal Board, or in other words, upon the popularity of some person who may be running for the office of President of the United States, as to whether his superintendents are his personal friends or enemies.

It will be seen that the Canal Board, as at present constituted, is composed of five members, (being a majority) to wit: the Lieutenant Governor, Comptroller, Secretary of State, Treasurer and Attorney General, neither of whom are supposed to be elected on account of their peculiar fitness to judge of the qualifications of or performance of duty by engineers and superintendents, or on account of their intelligence and qualifications with reference to the details of the management of the canals. On the contrary, their duties are known to be of a legislative, financial, or legal character, and such as to seldom, if ever, bring them into contact with the persons whose appointments they control. The other four members of the Canal Board, to wit: the State Engineer and three Canal Commissioners, are supposed to be selected by the people on account of their general intelligence and qualifications with reference to the details of the construction and management of the canals; and their duties are such that they are constantly brought into contact with, and are almost entirely dependent for their success, upon the engineers and superintendents who are appointed by the five who are in the majority.

Unfortunately for the true interests* of the State, it seems impossible to separate the appointments above referred to, together with many others of equal importance, from political considerations, so long as a general change in the management and superintendence of the canals is expected with every change of political ascendancy in the State: and the most the Legislature can do, under the circumstances, seems to be to place the power of appointments and removals with those whom the people hold as directly responsible for the proper construction and economical management of the canals.

The system of letting the canal repairs by contract has now been in force upon some portions of the canals during the past two years; and my observation during the last year has satisfied

me that the interests of the State require that the system should be either entirely abandoned or materially modified. Under the existing law the Commissioners are required to let the repairs to the lowest bidder who will give responsible security for the performance of the contracts. Under this provision the Commissioner is often obliged to allot the contract to men whom he knows to be entirely incompetent to perform it, both in regard to the means and experience, and at prices less than one-half of what he knows will be the annual cost of repairs. The result is, that the property of the State which goes into the possession of the contractors is, in some cases, generally wasted or *converted* during the early part of the first season, and the contractor leaves the work, with his men unpaid, and the canal in a condition much worse than it was when he undertook the repairs. The Commissioner is then obliged to direct the superintendent of repairs to employ a force immediately, and procure new implements for the purpose of keeping up navigation until he can relet it to another contractor, who is liable to follow in the footsteps of his predecessor.

The undersigned would, therefore, respectfully recommend the Legislature to so modify the laws with reference to this subject, as to allow the proper letting board to use a limited discretion in regard to the character of the men to whom contracts shall be awarded, the price below which the work shall not be allotted, and the extent of canal that may be embraced in one contract. I would also recommend that the services of the superintendents of repairs be dispensed with, upon such portions of the canal as may be placed under contract for repairs and when the work of construction or enlargement requires the presence of a resident engineer, and that the repairs be made under the direction of the engineer.

The views of Mr. Clark, my immediate predecessor in office, in relation to the letting of the canal repairs by contract, and the employment as well as appointment of superintendents of repairs, will be found in the following extract from his report for the year 1855:

"This law is, in my judgment, defective in one particular. It should so be amended as to abolish the office of superintendent of canal repairs, in all cases where the repairs are done by contract, and should make it the duty of the Canal Commissioners, with the aid of the division and resident engineers, to see that the contracts are faithfully carried out, all their provisions fully complied with, and the public interests protected.

"Should the superintendents be retained, and the chief management of the canals be placed under their control, differences of opinion would be very likely to arise between them and the contractors, which would be too apt to result in collusion between the parties; in which case it is very easy to foresee, that at the expiration of five years, although the State would have saved largely in actual disbursements, the dilapidated condition of its works would greatly increase its subsequent expenditures.

"If it should be deemed unadvisable to amend the law in the manner recommended, it would be at least a step towards retrenchment, to require the Canal Commissioners to assume the full responsibilities which have been imposed upon them by the Constitution and the laws, in the management of the navigation and repairs of the canals, by selecting the superintendents and other subordinate officers acting under them. Such a concentration of responsibility is believed to be a safe and salutary principle when applied to financial operations."

V. *Land Department.*

It has not been customary for the State Engineer and Surveyor to make any reference, in his annual report to the Legislature, to the Land Department, which, by virtue of his office, comes under his supervision.

In order to bring this matter properly to the notice of the Legislature, I have requested the chief clerk in charge of the Land Department, Mr. B. S. Van Rensselaer, who has had the entire charge of, and has ably performed the duties pertaining to this Department from 1821 to 1841, and again from 1847 to the present time, to prepare a statement showing the transactions during the past year, and also the present amount and condition of the lands belonging to the State.

Mr. Van Rensselaer's report is appended hereto, and will be found to contain much valuable information, as well as many important suggestions.

I would call the attention of the Legislature particularly to the suggestion with reference to republishing a new and revised map and atlas of the State. The want of such a map and atlas (made up of counties) is daily felt in this office, and I cannot urge too strongly upon the Legislature the importance of making some provisions with reference to it.

All which is respectfully submitted.

S. SEYMOUR.



DOCUMENTS
ACCOMPANYING THE REPORT OF THE STATE
ENGINEER AND SURVEYOR, FOR 1856.



EASTERN DIVISION.

REPORT OF J. P. GOODSSELL, DIVISION ENGINEER OF THE NEW-YORK STATE CANALS, 1856.

DIVISION ENGINEER'S OFFICE, }
ALBANY, January 1st, 1857. }

HON. SILAS SEYMOUR, *State Engineer and Surveyor*:

SIR—In obedience to the 5th regulation, prescribing the duties of division engineers, issued from your office August 20, 1856, I herewith submit to you the annual report required from this department, showing the condition and progress of the canals upon this division, for the year 1856.

The canals embraced in this division are as follows :

	Miles.
Erie canal from Albany to east bank of Oneida Lake canal,	133.58
Albany basin,	0.77
Champlain canal and Glens Falls feeder,	78
Black River canal and feeders,	48.10
Improvement of Black river,	42.50
Reservoirs,	12.95
Total,	<u>315.90</u>

This division was subdivided on the 1st day of January, 1856, into four residencies :

	Miles.
1st Residency, eastern subdivision of Erie canal, extending from Albany to west end of Canajoharie aqueduct,	67.69
2d Residency, western subdivision of Erie canal, extending from west end of Canajoharie aqueduct to east end of the Oneida Lake canal,	66.66

3d Residency, Champlain canal and Glens Falls feeder,	78.00
4th Residency, Black River canal and feeders,.....	48.10
Improvement of Black river,	42.50
Reservoirs,	12.95
Total,.....	<u>315 90</u>

On the 20th day of November, 1856, the subdivisions were changed, and the whole division made into three residencies.

First residency; Champlain canal and Glens Falls feeder,	78.00
Erie canal to west side of State-street bridge, Schenectady,.....	30.00
Albany basin,	0.77
Total,.....	<u>108.77</u>

Second Residency; Erie canal from west side of State- st. bridge to east bank of Oneida Lake canal,	103.58
Third residency; Black River canal, Black River im- provement and reservoirs,	103.58

Residents in charge when divided into four residencies.

Residencies.	Names.	Time.
First,...	Spencer Cole,.....	January 1, 1856, to May 15.
do	Wm McCammon,...	May 15, 1856, to Nov. 20.
Second,.	Wm. B. Taylor,	January 1st, 1856, to Feb. 10.
do	Thos. H. Bates,	February 10, 1856, to Nov. 20.
Third, ..	J. L. Stephenson,...	January 1st, 1856, to April 1.
do	S. A. Charles,.....	April 1, 1856, to Nov. 20.
Fourth,.	Nelson J. Beach, ...	January 1st, 1856, to Jan. 16.
do	E. W. Butler,.....	January 17th, 1856, to Dec. 31.

Residents in charge when subdivided into three residencies.

First,...	S. A. Charles,.....	November 20, 1856, to Dec. 31.
Second, .	Thomas H. Bates, ..	November 20, 1856, to Dec. 31.
Third, ..	E. W. Butler,	Nov. 20, 1856, to Dec. 31.

The expenses for engineering have been \$88,275.24, which is 10.13 per cent of the whole amount of work done during the year.

The annexed abstract and summary, No. 1, will show you the amount expended upon each residency, and the total for all expenses on account of engineering.

Table No. 1 gives the names, rank, period of service, and compensation of the engineers and assistants who have been employed on the eastern division.

The expenses in this service are necessarily larger upon this division, as they embrace the expenditures connected with the division engineer's office, in making and copying maps, and filing of all maps, plans, proposals, &c., connected with the whole State canals, and many expenses not attached to the other divisions.

STATEMENT

Showing the number of persons employed in the Engineer Department on the Eastern Division of the New-York State canals, on the 31st day of December, 1856.

CLASSIFICATION.		RESIDENCIES.			Total.
		1.	2.	3.	
Division engineers,	1	.....	.....	.....	1
Resident engineers, .....	.....	1	1	1	3
First assistant engineers, ..	.....	2	5	1	8
Second assistant engineers, ..	.....	4	9	1	14
Levelers and surveyors, ...	.....	2	6	1	9
Draftsmen and clerks, .....	.....	3	2	.....	5
Rodmen, .....	.....	5	5	3	13
Tapemen and chainmen, ..	.....	.....	1	.....	1
Axemen, .....	.....	6	3	.....	9
Inspectors of work, .....	.....	7	3	.....	10
	1	30	35	7	73

Annexed are the following tables :

- No. 1. Statement in detail of the expenditures by each resident engineer.
- No. 2. Work under existing contracts let prior to the passage of act, chap. 329, Laws of 1854.
- No. 3. Work under existing contracts let in pursuance of said act.

No. 4. Abstract of materials delivered.

No. 5. Canal and structures, eastern division of enlargement of Erie canal.

ENLARGEMENT OF THE ERIE CANAL.

All the work upon this division is now under contract except the new feeder dam at Schoharie creek. The contractors were progressing steadily with their work until the 16th day of October, when the following circular was received from the Auditor of the Canal Department:

STATE OF NEW-YORK:

CANAL DEPARTMENT, }
Albany, Oct. 16, 1856. }

At a meeting of the Canal Board, held this day :

Whereas, It has been ascertained that the amount of money provided by the Constitution and appropriated by the Legislature for the enlargement of the Erie, the Oswego, the Cayuga and Seneca canals, and the completion of the Black River and Genesee Valley canals, and the enlargement of the locks on the Champlain canal, will be insufficient for the accomplishment of these objects, and that there will be a deficiency of several millions of dollars after the amount now provided for that purpose shall have been expended, therefore

Resolved, That in the opinion of this Board, the current and future expenditures upon the Erie, the Oswego, and the Cayuga and Seneca canals, respectively, should be made with strict reference to bringing the largest possible amount of enlarged canal into practical use before the means provided for the above purpose shall have been expended.

Resolved, That in the opinion of this Board, all works and structures except such as are absolutely indispensable to the safe and economical navigation of the canals, together with the delivery of materials for slope walls or other structures, which, in the opinion of the Commissioner or engineer in charge, will not or should not be used in the work before the funds now provi-

ded by law have been expended, should be stopped at once by the necessary orders from the proper officers.

EXTRACTS FROM MINUTES—N. S. BENTON, *Auditor*.

In order to carry out the spirit and intent of the above resolutions, the following course was pursued after a careful review of the whole line embraced in the eastern division.

DIVISION ENGINEER'S OFFICE, }
Albany, October 31st, 1856. }

HON. C. GARDINIER, *Canal Commissioner* :

Below I furnish you with a list of contracts on the eastern division of the Erie canal which may be suspended, as the work embraced in each is not necessary to secure seventy feet in width of water-way, for the opening of canal navigation in the spring of 1857.

Section No. 16.	Bridge abut's, secs. 15, 16 & 17.
do 17.	do 33 and 35.
do 18.	do 44 and 46.
do 35.	do 51, 52 & 53
do 41, 42, 43 and 44.	do 56.
do 50, 51, 52 and 53.	do 57, 58 & 59.
do 83.	do 60, 61 & 62.
do 117.	Culverts, sections 112 and 121.
do 128.	do 126 to 128.
Lock No. 2.	Valve gates and fixtures for
do 42.	locks Nos. 24, 32, 34, 38, 39,
Printup's aqueduct.	40, 41, and 42.
Alstona aqueduct.	

In view of the above report, the Canal Commissioner issued the following circular to each contractor for the above specified work.

CANAL COMMISSIONER'S OFFICE, }
Fultonville, October 31, 1856. }

To ———, contractor for the construction of ——— for the enlargement of the Erie canal :

In accordance with a proviso in your contract with the State of New-York, made and provided, you are hereby notified that appropriations are exhausted on the eastern division of the enlargement of the Erie canal, for the fiscal year ending Sept. 30, 1857.

No further estimates will be made from and after the 1st day of November, 1856, on account of any work you may thereafter perform, or for any materials delivered, until at such time as you are notified that the work embraced in your contract will be resumed.

(Signed)

C. GARDINIER,
Canal Commissioner.

The above letters were delivered to the several contractors, and duplicates of each placed on file in the office of the resident engineer.

The work on the unsuspended contracts has since progressed slowly and only at such points as will secure the greatest advantages for the relief of navigation.

The annexed profile will show you the condition of the canal on the first day of January.

There were in use during the past year, of enlarged canal, 105.872 miles, and 27.708 miles partially enlarged, and old canal, 8 miles.

The new locks, Nos. 32, 34, 39, 40 and 41, were brought into use the past season.

The dams across the Mohawk at Rome and at Rocky Rift feeder, are completed, the Rome feeder has been the past season, and the Rocky Rift feeder will be completed for use in the coming season.

The work on section number sixty-two is in a bad condition, and it will be with great difficulty that it can be brought into use with its enlarged dimensions by the opening of navigation.

It is proposed to change somewhat the plan of constructing that portion of it which comes into contact with the river, and a plan of such change will be submitted to you in a few days.

There are yet remaining on the main line of canal three old locks, one each at locks No 2, 24 and 42. If funds are provided all these locks may be ready for use by the first day of September, 1857.

By an examination of the annexed table, No. 5, you will see the length in miles of enlarged and completed, partially enlarged, and old canal, together with the number of all the important structures on this division, for the year 1856.

A new dam at Schoharie creek is indispensable to the safety of navigation. The waters of the Schoharie creek supply the canal for a distance of twenty-five miles. The old dam, (which is the dam used when the creek was crossed by slack water,) is almost worthless, and has to be maintained at great expense. A plan and estimate have been made for a pavement stone dam, and I would recommend that it be placed under contract immediately.

Great inconvenience is felt in the vicinity of the weigh lock, at West Troy, by the want of a vertical wall or substantial dock, which should extend on the berm side from the first bridge east of the weigh lock, to the west bank of the side cut. The boats from both canals collect at this point, and it is impossible for them to get near the bank on account of the slope of the wall and the old bench upon which it was laid.

I would recommend that a permanent wall or docking be erected before the opening of navigation.

There have been several breaks the past season, growing out of the construction of the new enlarged canal, the most important of which was at the "Big Nose." There was also one on section No. 128, five miles west of Rome, and one on section No. 17. Navigation was delayed a few days by bringing into use new locks Nos. 32, 34, 39, 40, and 41. With these exceptions, navigation has been steadily maintained, with a good supply of water.

If funds are provided in time, there will be secured a width of water way of 70 feet the entire length of the division, on the opening of the canal the coming season.

The amount of work done upon all contracts the past year, was \$650,470.00.

The estimated cost of completing the work, exhibited in the annexed summary, No. 2, exclusive of land damages, is as follows:

Work under existing contracts, let prior to the passage of act chap. 329, Laws of 1854,	\$12,629 00
Work let in pursuance of said act,	324,777 00
Fifteen per cent retained on work done,	127,575 00
Engineering and contingencies,	67,481 00
Work not under contract,	40,000 00
Total,	<u>\$572,462 00</u>

BLACK RIVER CANAL.

All the work necessary for the completion of this canal and its feeders, the improvement of the Black river and the reservoirs, is now under contract, and in a good state of forwardness.

On the 12th day of November the following uncompleted work was suspended by the Canal Commissioner, in the same manner and under the same circumstances and condition as the work upon the Erie canal.

Improvement of Black river,	Ward McVickar.
do do	A. Ward & Co.
Section work for Delta feeder,	R. R. Kenne.
Guard lock do	James Mitchell.
Culvert do	John Whittlesey.
Bridges do	do do
Woodhull reservoir,	Smith & Wright.
Chub lake do	Britton & Townsend.
South Branch do	do do

The canal proper has been in use its entire length the past season, making the connection complete between the Black river, at Lyons Falls, and the Erie canal, at Rome.

The contractors for the improvement of the river have driven their work with commendable energy, and they will be able to complete their contracts in the time specified, if funds are provided which the work requires.

During the past season the work has been confined to those points where the greatest obstacles were found to navigation,

and many of the worst bars have been removed by the excavation of a channel through them of sufficient capacity for the passage of boats.

By a reference to the last "Annual Report of the State Engineer and Surveyor," pages 55 and 56, will be found a full history of the reservoirs upon this canal, together with their location, superficial areas, and capacity.

These reservoirs have been pushed steadily on until the 12th day of November, when the contracts were suspended for want of funds applicable to the work.

The resident engineer in charge of these structures, says :

"The works on the Chub lake and South branch reservoirs have been progressing steadily during the last year. It will require nearly another season to complete them. The North branch reservoir is now completed, and ready for use next season, and will furnish about 4,000 cubic feet of water per minute for 110 days; and the Woodhull reservoir is so far advanced as to be made available the coming season with a trifling expenditure. This reservoir is estimated to furnish 4,000 cubic feet per minute for 110 days."

If the object sought to be attained by act, chap. 181, Laws of 1851, is a desirable one, it is of great importance that these reservoirs should be completed and made available as soon as possible, as the claims for damages arising from a delay to meet the requirements of the act for the "supply of water to the Black river," will increase to a fearful extent, and probably in the end, be greater than if the plan for reservoirs had never been projected, or their construction begun.

The total amount of work done the past year has been \$110,061.

The estimated cost for completing this canal, with its feeders and reservoirs, together with the improvement of the Black river, exclusive of land damages, is as follows :

Work under existing contracts, let prior to the passage of act chap. 329, Laws of 1854,.....	\$656 00
Work let in pursuance of said act,.....	129,110 00

15 per cent retained,	28,237 00
Engineering and contingencies,	25,953 00
Total,	<u>\$183,956 00</u>

The annexed table, No. 3, will show the condition of the work, amount done, amount remaining to be done, and cost to complete existing contracts.

CHAMPLAIN CANAL.

This important canal, connecting tide water in the Hudson with Lake Champlain, and through the Chambly canal, reaching the St. Lawrence and the vast north, is assuming a prominent position as the principal and most productive of all the lateral arms in our system of internal improvements.

The annexed map is intended to illustrate the position of this canal, and its connections, with particular reference to its Canada trade.

The Chambly canal has a capacity about equal to the enlarged canal, and when the locks now under contract, and the remaining six old ones shall have been completed, the cost for enlarging the prism, to give a capacity of sixty feet width and six feet depth of water, would be small in comparison with the benefit it would give to all the interests connected with transportation.

As soon as the locks now under contract are completed and in use, an increase of capacity in tonnage of boats will be obtained of one-fifth, if the two junction locks below Cohoes and the north guard lock at the Mohawk river were rebuilt. I would recommend that they be put under contract at an early date, so that they may be ready for use in the spring of 1858—the time when the Whitehall locks will be made available. The contracts upon this canal are nearly all suspended in consequence of the exhaustion of the appropriation for this specified work. It is deemed of the utmost importance for the maintenance of navigation that the Saratoga lock—the single and combined locks at Fort Ann—be completed for use the coming season.

The new combined locks at Waterford were brought into use a few weeks before the close of navigation. I would recommend the erection of a weigh lock at Waterford, for the reason that it

would be a great relief to the West Troy weigh lock; and without one at this point a door is opened for innumerable frauds upon the just revenues of the State.

A new wood lock on the Glens Falls feeder has been constructed the past year under the head of repairs.

Several detentions have occurred to navigation the past season. The first, a break at the head of the old lock at Saratoga dam; the second, at the head of the new combined locks at Fort Ann, both of which were consequent upon the construction of the new locks; a third and serious one occurred at Coveville, causing a detention of four or five days. I have been unable to learn the cause which produced it.

The Saratoga dam, across the Hudson, should be secured and strengthened. It is in a decayed and unsafe condition.

The amount of work done upon this canal the past year, on existing contracts for enlarging the locks,.....	\$110,200 00
For work done as repairs,.....	6,460 00
	<hr/>
	\$116,660 00
	<hr/>

The annexed summary No. 4, will show the condition of the work, amount done, amount remaining to be done, and cost to complete work now under contract.

Estimated cost to complete the Eastern division of New-York State canals, exclusive of land damages.

Enlargement of the Erie canal. /

Work on existing contracts, let prior to act, chap. 329, Laws of 1854, at contract prices,	\$12,629 00	
Work let in pursuance of said act, at contract prices,.....	324,777 00	
Fifteen per cent. retained on all contracts let under said act,	127,575 00	
Engineering and contingencies,	67,481 00	•
Work not under contract,.....	40,000 00	
	<hr/>	
Carried forward,.....	\$572,462 00	

Brought forward, \$572,462 00

Enlarging locks of Champlain canal.

Work let in pursuance of act, chap. 329, Laws of 1854, at contract prices,.....	\$71,860 00	
15 per cent retained on work done in pursuance of said act,	33,246 00	
Engineering and contingencies,	14,372 00	
Work not under contract,	104,700 00	
	<hr/>	224,178 00

Black River canal and improvement of Black river.

Work let prior to act, chap. 329, Laws of 1854, at contract prices,	\$656 00	
Work let in pursuance of said act at contract prices,	129,110 00	
15 per cent retained on all work done under said act,	28,237 00	
Engineering and contingencies,	25,953 00	
	<hr/>	183,956 00
Total,	\$980,596 00	

Comparison of the present estimate with the estimated cost of
work to be done, made January 1st, 1856 :

Enlargement of Erie canal.

Estimated cost to complete,.....	\$371,146 00	
Work done in 1856,.....	650,470 00	
	<hr/>	\$1,021,616 00
Estimated cost January 1st, 1856,	952,028 00	
Increase,.....	\$69,588 00	

Enlarging locks of Champlain canal.

Estimated cost to complete work done in 1856,.....	\$79,046 00	
Work done in 1856,	110,200 00	
	<hr/>	\$189,246 00
Estimated cost January 1st, 1856,	144,648 00	
Increase,.....	\$44,598 00	

Black River canal.

Estimated cost to complete,.....	\$142,742 00	
Work done in 1856,	110,061 00	
	<hr/>	\$252,803 00
Estimated cost January 1st, 1856,	244,594 00	
	<hr/>	
Increase,.....		<u>\$8,209 00</u>

Comparative Summary for Eastern division.

Estimated cost to complete,.....	\$592,934 00	
Work done in 1856,.....	870,731 00	
	<hr/>	\$1,463,665 00
Estimated cost January 1st, 1856,	1,341,270 00	
	<hr/>	
Total increase of estimate,.....		<u>\$122,395 00</u>

As the work approaches completion the estimates can be made with more certainty than at the commencement. The above increase of estimate is necessary to complete all the work necessary to be done on existing contracts.

Respectfully submitted,

J. P. GOODSELL,

Division Engineer.

Statement showing the number and compensation of Engineers employed from Jan. 1st to April 30th, both months inclusive, on the Eastern Subdivision of the Eastern Division of the Enlargement of the Erie Canal.

SPENCER COLE, Resident Engineer.

Name and Nature of Service.	Time employed. Days.	Rate of compensation. Per day.	Amount.
Spencer Cole, resident engineer,...	....	.....	\$566 67
do travel .....	....	.....	288 24
Robert Burns, 1st assist.-engineer,	78	\$4 00	312 00
James P. Green, do do	104	4 00	416 00
James H. Ledlie, do do	99	4 00	396 00
D. Campbell, do do	29	4 00	116 00
H. H. Bates, do do	76	4 00	304 00
R. D. Shepard, do do	26	4 00	104 00
Peter Hogan, do do	18	4 00	72 00
John L. Dodge, do do	20	4 00	80 00
T. W. Spencer, 2nd assist.-engineer,	104	2 75	286 00
R. D. Shepherd, do do	78	2 75	214 50
Webster Snyder, do do	78	2 75	214 50
S. W. Harnard, do do	104	2 75	286 00
E. M. Jenkins, do do	77	2 75	211 75
C. H. Fisher, do do	52	2 75	143 00
C. L. Fuller, do do	26	2 75	71 50
H. H. Bates, assistant and clerk,...	28	2 50	70 00
John Bogart, do do ...	109½	2 50	273 00
E. M. Jenkins, leveller,.....	27	2 00	54 00
C. H. Fisher, do	52	2 00	104 00
Wm. H. Johnson, do	66	2 00	132 00
Charles L. Fuller, do	78	2 00	156 00
John Mc Kercher, do	91	2 00	182 00
E. H. Putnam, do	60	2 00	120 00
A. C. Vedder, do	52	2 00	104 00

Name and Nature of Service.	Time employed. Days.	Rate of compensation. Per day.	Amount.
Wm. A. Ketchum, leveller,	13	\$2 00	\$26 00
A. A. Gutman, assistant-leveller, ..	26	1 75	45 50
A. Plinta, surveyor & draughtsman,	87	3 00	261 00
D. Vaughn, do do	101	3 00	303 00
Edward Gardinier, rodman,	6	1 50	9 00
John A. Groat, do	41	1 50	61 50
James H. Bogart, do	104	1 50	156 00
William A. Newman, do	104	1 50	156 00
A. A. Gutman, do	78	1 50	117 00
A. E. Babcock, do	39	1 50	58 50
W. H. Printup, do	67	1 50	100 50
Hale T. Starin, do	60	1 50	90 00
Peter F. Story, do	52	1 50	78 00
Stephen Bronk, do	52	1 50	78 00
J. McGown, do	26	1 50	39 00
S. H. Matthews, tape and chainman,	52	1 25	65 00
Stephen Bronk, do do	52	1 25	65 00
Joseph Hogan, do do	104	1 25	130 00
Henry V. Cole, do do	104	1 25	130 00
O. D. Shepherd, do do	51	1 25	63 75
Richard Winne, do do	45	1 25	56 25
B. P. Sheldon, do do	22	1 25	27 50
Edward Gibbs, axeman,	78	1 25	97 50
J. McGown, do	78	1 25	97 50
Thady Davy, do	78	1 25	97 50
W. H. Printup, do	37	1 25	46 25
Andrew E. Neff, do	37	1 25	46 25
T. Mc Gown, do	18	1 25	22 50
Wm. Wemple, do	67	1 25	83 75
Edson Stone, do	51	1 25	63 75
David Johnson, do	8	1 25	10 00
Elias Dome, do	26	1 25	32 50
J. W. Linginfelter, do	18	1 25	22 50
J. W. Schuyler, do	17	1 25	21 25
Theodore Weston, clerk,	78	2 00	156 00
Samuel Belding, do	104	1 50	156 00

Name and Nature of Service.	Time em- ployed. Days.	Rate of compensation. Per day.	Amount.
Richard Warn, supt. and inspector,	40	\$2 50	\$100 00
W. C. Adams, do do	38	2 50	95 00
David Rogers, do do	66	2 50	165 00
John S. Davis, do do	78	2 50	195 00
Walton Cady, do do	11	2 00	22 00
Judson Durfee, do do	46	2 00	92 00
C. C. Kealor, do do	11	2 00	22 00
S. G. Green, do do	47	2 00	94 00
Jonas Southard, do do	60	2 00	120 00
Martin C. Myers, supt. and inspt.,	68	2 50	170 00
Benjamin Bradley, do	57	2 00	114 00
Zacharia Fonda, do	67	2 00	134 00
Hiram Sammons, do	34	2 00	68 00
H. S. Stewart, do	51	2 00	102 00
Peter F. Daw, do	50	2 00	100 00
Daniel Allen, do	33	2 00	66 00
Josiah Close, do	17	2 00	34 00
E. B. Spraker, do	26	2 00	52 00
Wm. Livermore, do	26	2 00	52 00
Cyrus Ballou, do	25	2 00	50 00
Peter Vine, do	21	2 00	42 00
Sela Knight, do	21	2 00	42 00
John A. Sturtevant, do	10	2 00	20 00
Edward Gibbs, do	26	1 50	39 00
John A. Davis, do	26	3 00	78 00
Hiram Sammons, do	26	2 50	65 00
Josiah Close, do	26	2 50	65 00
			<hr/> \$10,544 91

Travel.

Robert Burns, first ass't engineer, travel,.....	\$12 28
E. M. Jenkins, second do	6 45
Chas. H. Fisher, do	14 60
Sam'l W. Harnard, do	22 19
John Bogart, do	9 81

Thomas W. Spencer, second ass't travel,.....	\$4 24
Wm. A. Ketchum, leveler, do	8 00
A. Anthony Gutman, do	50
	<hr/>
	\$10,622 98

Incidental Expenses.

Office rent,.....	\$77 40
Lights,	39 33
Fuel,.....	73 80
Stationery,	89 99
Postage, telegraph and express,.....	11 48
Affidavits,	12 38
Cleaning office,.....	3 25
Miscellaneous,.....	166 04
	<hr/>
Total,.....	\$11,096 65

Statement showing the number and compensation of engineers employed from May 1st to November 20th, both days inclusive, on the Eastern subdivision of the Eastern Division of the enlargement of the Erie Canal.

WM. McCAMMON, Resident Engineer.

Name and nature of service.	Time employed. Days.	Rate of compensation. Per day.	Amounts.
Wm. McCammon, resident engineer,			\$872 32
do travel, do			348 96
Francis S. K. Russel, first ass't eng'r,	120	4 00	480 00
Russell D. Shepherd, do	175	4 00	700 00
Henry H. Bates, do	175	4 00	700 00
John L. Dodge, do	175	4 00	700 00
Peter Hogan, do	175	4 00	700 00
James P. Green, do	17	4 00	68 00
Thomas W. Spencer do	148	4 00	592 00
do second do	33 $\frac{5}{6}$	2 75	93 00
S. W. Harnard, do	21	2 75	57 75
Edgar M. Jenkins, do	175	2 75	481 25
Charles H. Fisher, do	175	2 75	481 25
Charles L. Fuller, do	175	2 75	481 25
John Bogart, do	175	3 00	525 00

Name and nature of service.	Time employed. Days.	Rate of compensation. Per day.	Amounts.
A. C. Vedder, second ass't engineer,	121	3 00	363 00
Wm. A. Ketchum, do	55 $\frac{2}{3}$	3 00	167 75
E. H. Ball, do	93 $\frac{1}{2}$	3 00	280 00
D. M. Green, office assistant,.....	53	2 ⁵⁰ / ₁₀₀	132 50
E. H. Putman, leveler,.....	175	2 00	350 00
A. C. Vedder, do	43	2 00	86 00
W. A. Ketchum, do	43	2 00	86 00
A. A. Gutman, do	18	2 00	36 00
Peter F. Storey, do	49	2 00	98 00
James H. Bogart do	148	2 00	296 00
Thos. J. P. Lacy, do	96	2 00	192 00
H. A. McCormick, do	38	2 00	76 00
Wm. A. Newman, do	70	2 00	140 00
Jeremiah McGown, assistant leveler,.	123	1 75	215 25
Wm. H. Printup, do	118	1 75	206 50
David Vaughn, surv'r & draughtsman,	175	3 00	525 00
Augusta Plinta, do	52	3 00	156 00
Alphonse Schoppe, do	111	3 00	333 00
G. D. Faussecare, do	17	3 00	51 00
Peter F. Storey, rodman,.....	12	1 50	18 00
James H. Bogart, do	27	1 50	40 50
Wm. A. Newman, do	105	1 50	157 50
Hall F. Starin, do	166	1 50	249 00
Jeremiah McGown, do	52	1 50	78 00
Stephen Bronk, do	175	1 50	262 50
Wm. H. Printup, do	57	1 50	85 50
Thomas J. P. Lacy, do	63	1 50	94 50
Olv'r D. Shepherd, do	148	1 50	222 00
George B. Griffin, do	96	1 50	144 00
Charles H. Clark, do	88	1 50	132 00
Joseph J. Hogan, do	66	1 50	99 00
Henry V. Cole, tape and chainman	57	1 25	71 25
Joseph J. Hogan, do	105	1 25	131 25
Richard Wihne, do	113	1 25	141 25
Oliver D. Shepherd, do	27	1 25	33 75
Benjamin P. Sheldon, do	175	1 25	218 75

Name and nature of service.	Time employed. Days.	Rate of compensation. Per day.	Amount.
Geo. B. Griffin, tape and chainman,	52	\$1 25	\$65 00
R. L. Annesley, do	114	1 25	142 50
A. B. Mitchell, do	103	1 25	128 75
William E. Stone, do	66	1 25	82 50
William Wemple, axeman,	166	1 25	207 50
William E. Stone, do	105	1 25	131 25
Jacob W. Schuyler, do	42	1 25	52 50
Elias Devoe, do	166	1 25	207 50
Oliver G. Wagner, do	170	1 25	212 50
Aaron Brooks, do	129	1 25	161 25
Samuel Belding, clerk,	148	1 50	222 00
M. C. Myers, inspector,	175	2 ⁵⁰ 50	437 50
John S. Davis, do	21	3 00	63 00
Hiram Sammons, do	163	2 50	407 50
Josiah Close, do	175	2 50	437 50
Benjamin Bradley, do	82	2 00	164 00
Z. Fonda, do	163	2 00	326 00
Hiram L. Stewart, do	175	2 00	350 00
Peter F. Daw, do	158	2 00	316 00
Daniel Allen, do	139	2 50	347 50
do do	27	2 00	54 00
E. B. Spraker, do	175	2 00	350 00
William Livermore, do	86	2 00	172 00
Cyrus H. Ballou, do	52	2 00	104 00
Peter Vine, do	52	2 00	104 00
Sela Knight, do	166	2 00	332 00
John A. Sturtevant, do	66	2 00	132 00
Edward Gibbs, do	21	1 50	31 50
A. H. Bilson, do	70	2 50	175 00
Hiram Pardu, do	16	2 00	32 00
Junius Rodgers, do	77	3 25	250 25
James P. Green, 1st assistant en- gineer, travel,			24 16
James H. Bogart, leveller,			9 55
James H. Ledlie, 1st ass't engineer,			20 44
			<hr/> \$19,503 18

Incidental Expenses.

Office rent,.....	\$207 11
Lights,	38 65
Fuel,.....	52 57
Stationery,	449 91
Postage and telegraph,.....	59 29
Affidavits,	44 00
Cleaning office,.....	11 74
Miscellaneous,.....	174 44
Total,	<u>\$20,540 89</u>

Statement showing the Names, Rank, period of service, and Compensation of the engineers employed on the Erie canal, from Albany to Schenectady, from Nov. 20th to Dec. 31st, 1856.

S. A. CHARLES, Resident Engineer.

Name and Rank.	Time employed. Days.	Rate of compensation. Per Day.	Amount.
S. A. Charles, resident engineer, travel,.....	....	.....	\$2 88
R. D. Shepherd, first ass't engineer,	35	4 00	140 00
Henry H. Bates, do do	35	4 00	140 00
Edward H. Ball, sec'nd ass't eng'r,	35	2 75	96 25
do unpaid by McCammon,	11	2 75	30 25
David Vaughn, draughtsman,	35	3 00	105 00
Alphonse Schoppe, do	35	3 00	105 00
G. D. Faussecare, do	26	3 00	78 00
do unp'd by McCammon	27	3 00	81 00
Oliver D. Shepherd, rodman,.....	35	1 50	52 50
Stephen Bronk, do	35	1 50	52 50
Thos. Goodsell, sen., clerk,.....	35	2 00	70 00
Peter F. Daw, inspector,.....	35	2 00	70 00
do unpaid by McCammon,	13	2 00	26 00
			<u>\$1,049 38</u>

Incidental Expenses.

Postage,.....	\$11 20
Stationery,	61 50
Rent,.....	18 00
Light,.....	6 00
Fuel,.....	8 25
	<hr/>
	\$1,154 33
	<hr/>

Statement shewing the Number and Compensation of Engineers employed from November 20th to December 31st, 1856, inclusive, [] from Schenectady to Canajoharie; on the eastern subdivision of the Eastern division of the enlargement of the Erie canal.

THOMAS H. BATES, *Resident Engineer.*

Names and nature of service.	No. of days.	Com- pensation per day.	Amount.
Thomas H. Bates, resident engineer,			
Salary,	\$1,700.00 per y'r.		\$93 15
do do do travel,	.....		38 22
John L. Dodge, first ass't engineer,	35	4 00	140 00
Thomas W. Spencer, do do	35	4 00	140 00
Edgar M. Jenkins, sec'd ass't eng'r,	12	2 75	33 00
John Bogart, do do do	35	2 75	96 25
Charles L. Fuller, do do do	12	2 75	33 00
Charles H. Fisher, do do do	35	2 75	96 25
A. C. Vedder, do do do	35	2 75	96 25
Thomas J. P. Lacy, leveler,.....	35	2 00	70 00
William A. Newman, do.....	12	2 00	24 00
James H. Bogart, do.....	12	2 00	24 00
G. H. Putman, do.....	35	2 00	70 00
W. H. Printup, assistant leveler,..	35	1 75	61 25
Jeremiah McGown, do do....	35	1 75	61 25
George B. Griffin, rodman,.....	35	1 50	52 50
Charles H. Clark, do.....	35	1 50	52 50
Malcolm E. Williams, do.....	25	1 50	37 50
Benjamin P. Sheldon, tape and chainman,	35	1 25	43 75
R. Annesley, do ...	35	1 25	43 75

Names and nature of services.	Time employed, days.	Rate of compensation per day.	Amount.
Edward Ball, 2d assistant engineer,	35	2 75	\$96 25
S. T. Emerson, leveller,	35	2 00	70 00
J. N. Tubbs, do	35	2 00	70 00
J. A. Miller, assistant leveller,	35	1 75	61 25
H. C. Howlett. do	35	1 75	61 25
A. Schoppe, surveyor & draughts'n',	35	3 00	105 00
R. Shaw, rodman,	35	1 50	52 50
G. R. Shaw, do	35	1 50	52 50
W. F. Newland, do	35	1 50	52 50
E. Gardinier, do	29	1 50	43 50
Jno. A. Seymour, tape and ch'n'm'n,	10	1 25	12 50
Wm. Griffith, axeman,	35	1 25	43 75
Jno. Simpson, do	35	1 25	43 75
A. H. Green, do	35	1 25	43 75
M. Knowlton, do	35	1 25	43 75
R. J. Cantwell, do	35	1 25	43 75
Chas. F. Hulbert, clerk,	35	2 00	70 00
Anson Miller, inspector,	35	2 50	87 50
R. Shaw, do	35	2 50	87 50
J. Palmer, do	35	2 50	87 50
Jas. Saunders, do	35	2 50	87 50
Jno. O'Hara, do	12	2 50	30 00
			<hr/> \$2,605 38

Incidental Expenses.

Stationery,	58 10
Fuel,	31 00
Lights,	22 20
Office rent,	45 02
Postage and telegraph,	21 35
Miscellaneous,	3 39
Total,	<hr/> \$2,786, 44 <hr/>

Statement showing the number and compensation of engineers employed from February 11th to December 31st, 1856, inclusive, on the western subdivision of the Eastern division of the enlargement of the Erie canal.

THOMAS H. BATES, *Resident Engineer.*

Name and nature of service.	Time employed.	Rate of compensation. Per day.	Amount.
	Days.		
Thos. H. Bates, res't en'gr, salary..	....	\$1,700	\$1,415 89
do do travel, 5,487 miles	....		329 22
W. S. Nearing, 1st ass't engineer,..	96	4 00	384 00
S. H. Sweet, do do	279	4 00	1,116 00
Jno. L. Dodge, do do	7	4 00	28 00
W. J. Keeler, do do	273	4 00	1,092 00
Henry Petingale, do do	183	4 00	732 00
Geo. B. Beach, 2d ass't engineer,.	279	2 75	767 25
A. B. Roberts, do do	279	2 75	767 25
Jno. Cooper, do do	121	2 75	332 75
A. V. Hartwell, do do	256	2 75	704 00
Geo. Grecheneck, do do	279	2 75	767 25
A. B. Rogers, do do	279	2 75	767 25
E. H. Ball, do do	96	2 75	264 00
Geo. Healy, do do	149	2 76	409 75
Josiah Shull, do do	34	2 75	93 50
J. Nelson Tubbs, ass't engineer,..	44	2 50	110 00
J. A. Miller, do	35	2 50	87 50
J. P. Whipple, do	57	2 50	142 50
J. N. Tubbs, leveller,	43	2 00	86 00
H. C. Howlett, do	114	2 00	228 00
E. B. Murdock, do	236	2 00	472 00
S. T. Emerson, do	174	2 00	348 00
J. A. Miller, do	200	2 00	400 00
H. C. Howlett, assistant-leveller,..	116	1 75	203 00
A. Schoppe, surveyor & draughts'n,	133	3 00	399 00
J. Cooper, do do	158	.....	474 00
Wm. F. Newland, rodman,	27	1 50	40 50
P. L. Tucker, do	208	1 50	312 00
Edward Gardinier, do	279	1 50	418 50
E. B. Murdock, do	19	1 50	28 50

Name and Nature of Service.	Time employed. Days.	Rate of com- pensation. Per day.	Amount.
G. R. Shaw, rodman,.....	44	\$1 50	\$66 00
R. J. Cantwell, do	279	1 50	418 50
J. Linenbecker, do	145	1 50	217 50
Geo. H. Dyett, do	211	1 50	316 50
J. A. Seymour, tape and chainman,	235	1 25	293 75
S. B. Kingsbury, do do	107	1 25	133 75
L. W. Davis, do do	134	1 25	167 50
Jno. Bourne, do do	27	1 25	33 75
Jno. M. Edgerton, do do	44	1 25	55 00
James M. Ball, do do	53	1 25	66 25
Jno. Simpson, axeman,.....	32	1 25	40 00
M. Knowlton, do	32	1 25	40 00
A. H. Green, do	25	1 25	31 25
Wm. Griffith, do	43	1 25	53 75
do do	44	1 50	66 00
D. L. Enearl, do	185	1 25	231 25
J. M. Edgerton, do	12	1 25	15 00
W. D. Dunning, do	39	1 25	48 75
Damon Brigham, do	192	1 25	240 00
Edward Thompson, do	47	1 25	58 75
A. Robinson, do	16	1 25	20 00
C. F. Hurlburt, clerk,	10	2 00	20 00
Thos. H. Crego, chief cl'k sub-div'n	192	3 00	576 00
do do do	79	4 00	316 00
M. W. Carter, inspector of masonry	230	2 50	575 00
J. N. Tubbs, do do	157	2 50	392 50
Robt. Stewart, do do	150	2 50	375 00
Jas. Saunders, do do	11	2 50	27 50
R. Shaw, do do	6	2 50	15 00
Geo. Wood, do do	202	2 50	505 00
Chauncey Getman, do do	156	2 50	390 00
Peter Lighthall, do do	86	2 50	215 00
J. Palmer, do do	25	2 50	62 50
Anson Miller; do do	8	2 50	20 00
Jno. O'Hara, inspector banks and walls,	84	2 50	210 00
A. Beckwith, do do	230	2 50	575 00

Name and Nature of Service.	Time employed.	Rate of compensation. Per day.	Amount.
	Days.		
Geo. Sturtevant, insp. banks and walls,	97	\$2 50	\$242 50
Jno. M. Edgerton, do do	192	2 50	480 00
Jairus Rodgers, do mechanical w'k,	151	3 00	453 00
			<hr/> \$21,782 86

Incidental Expenses.

Stationery and printing,.....	442 02
Fuel,.....	110 31
Light,.....	87 08
Office rent,.....	468 94
Postage, telegraph and express,.....	230 39
Miss. and affidavits,.....	156 28
Total,.....	<hr/> \$23,277 88 <hr/>

Statement showing the number, rank, period of service, and compensation of the engineers and assistants who have been employed on the Champlain Canal, during the year 1856.

S. A. CHARLES, Resident Engineer.

Name and nature of service.	Time employed.	Rate of compensation. Per an'm.	Amount.
	Months.		
John L. Stephenson, resident eng'r,	3	\$1,700	\$425 00
do do travel,			139 56
do do allowed by			
Canal Board,.....			47 22
S. A. Charles, resident engineer, ..	9	1,700	1,275 00
do travel,.....			410 66
	Days.	Per Day.	
Charles H. Beach, 1st ass't eng'r,..	35	4 00	140 00
do do do ..	4	3 75	15 00
do travel,			56 86
J. A. Watkins, 1st ass't engineer,..	244	4 00	976 00
do travel,			1 80
F. S. K. Russell 1st ass't engineer,	43	4 00	172 00
Thos. H. Learned, 2d do	168	2 75	462 00
do travel,.....			92 68

Name and nature of service.	Time employed. Days.	Rate of compensation. Per day.	Amount.
Albert W. Hale, 2d ass't engineer,	314	\$2 75	\$863 50
do travel,			21 15
William Weller, 2d ass't engineer,	278	2 75	764 50
do travel,			5 70
E. H. Crocker, 2d ass't engineer,.	236	2 75	649 00
Thomas M. Sherman, travel,			15 65
Francis D. Moe, leveler,	78	2 00	156 00
do travel,			4 30
Francis D. Moe, leveler and clerk,	236	2 50	590 00
Henry E. Sargent, leveler,	156	2 00	312 00
do travel,			4 10
Seymour Daley, leveler,	206	2 00	412 00
J. A. Watkins, rodman,	35	1 50	52 50
D. F. Vernam, do	249	1 50	373 50
Geo. B. Miller, do	181	1 50	271 50
Hiram H. Adams, do	34	1 50	51 00
Seymour Daley, tapeman,	78	1 12 $\frac{1}{2}$	87 75
do travel,			1 80
Asa Bacon, tapeman and axeman, ..	127	1 00	127 00
John Hardin, do ..	149	1 00	149 00
C. Vander Werken do ..	1 $\frac{1}{2}$	1 00	1 50
John M. Horton, do ..	1	1 00	1 00
D. O. Horn, do ..	4	1 00	4 00
James Wickes, do ..	33	1 00	33 00
Joseph Goodale, inspector,	314	2 50	785 00
Samuel Lewis, do	29	2 50	72 50
do travel,			3 55
A. H. Vander Werken, inspector, ..	224	2 50	560 00
E. K. Hensted, do ..	137	2 50	342 50
H. G. Sargent, do ..	158	2 50	395 00
Derrick Sutfin, do ..	41	2 50	102 50
			<hr/>
			\$11,426 08

Incidental Expenses.

Office rent,	213 22
Stationery,	178 93
Postage and telegraph,	56 15

Express,	\$18 50
Light,	42 80
Fuel,	74 75
Labor,	32 29
Miscellaneous,	42 35
	<hr/>
	\$12,085 07
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Statement showing the number and compensation of engineers employed from January 1st to January 20th, 1856, on the Black River Canal.

NELSON J. BEACH, Resident Engineer.

Name and nature of service.	Time employed.	Rate of compensation.	Amount.
Nelson J. Beach, resident engineer,		\$1,700	\$135 06
do travel,			45 78
E. W. Butler, first assistant,	15	4 00	60 00
James E. Willard, do	17	4 00	68 00
A. L. Wetmore, sec'd do	17	2 75	46 75
A. D. Pease, do do	17	2 75	46 75
J. Sterling Smith, do do	17	2 50	42 50
W. R. Northway, do do	17	2 50	42 50
John Wilson, leveler,	10	1 75	17 50
Jno. M. McClusky do	17	1 75	29 75
K. J. Willard, rodman,	17	1 50	25 50
S. A. Safford, do	17	1 50	25 50
H. S. Ninde, do	17	1 50	25 50
John J. Tisse, axeman,	17	1 25	21 25
Leonard King, inspector,	2½	2 00	5 00
Sanford Safford, do	17	1 75	29 75
			<hr/>
			\$666 09

Incidental Expenses.

Stationery,	7 57
Light,	7 88
Office rent,	3 54
Postage and telegraph,	88
Miscellaneous,	1 88
	<hr/>
Total,	\$687 84
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Statement, showing the number and compensation of engineers, employed from January 21st, to Dec. 31st, 1856, both days inclusive, on the Black River canal.

E. W. BUTLER, Resident Engineer.

Name and nature of service.	Time employed Days	Rate of compensation. per day.	Amount.
E. W. Butler, resident engineer,...		\$1,700 00	\$1,610 34
do travel,.....			326 82
Jas. E. Willard, first as't engineer,	297	4 00	1,188 00
do travel,.....			88 40
Chas. F. Smith, first ass't engineer,	241	4 00	964 00
A. L. Wetmore, sec'd do	259	2 75	712 25
do travel			48 00
A. D. Pease, second ass't engineer,.	36	2 75	99 00
P. H. Conkling, do do	193	2 75	530 75
Alexander Brown, do do	256	2 75	704 75
J. Sterling Smith, do do	89	2 75	244 75
W. R. Northway, do do	259	2 75	712 25
John Wilson, do do	232	2 75	638 00
do leveller,.....	59	2 00	118 00
C. L. Loomis, second ass't engineer	114	2 75	313 50
do do do	78	3 50	273 00
John M. McClusky, leveler,	42	2 00	84 00
K. J. Willard, do	42	2 00	84 00
Chas. E. Carter, do	213	2 00	426 00
S. A. Safford, rodman,	193	1 50	289 50
H. S. Ninde, do	30	1 50	45 00
W. D. Dunning, do	182	1 50	273 00
W. H. Diffendorf, do	186	1 50	279 00
Hosea Corinth, do	49	1 50	73 50
Theoph. Williams, do	35	1 50	52 50
P. P. Hunter. do	157	1 50	235 50
do axeman,	33	1 25	53 75
John I. Tisse, do	7	1 25	8 75
T. W. Bebee, do	3	1 25	3 75
George Brown, do	2	1 25	2 50
Hiram Pinnocks, do	2	1 25	2 50
Leonard G. Peck, do	5	1 25	6 25

Names and nature of service.	Time employed. Days.	Rate of compensation. per day.	Amount.
Reuben Howard, axeman,.....	14½	1 25	\$18 13
J. P. Hodgkins, do	6	1 25	7 50
Oliver Larence, do	30	1 25	37 50
Daniel Buck, clerk,	15	2 00	30 00
do do	60	2 50	150 00
Jesse T. Gould, rodman,.....	50	1 50	75 00
do inspector,.....	120	2 50	300 00
A. B. Hine. do	37	2 00	74 00
do do	115	2 50	287 50
Ephraim Owens, do	84	2 50	210 00
Sanford Safford, do	30	1 75	52 00
			<hr/> \$11,732 72

Incidental expenses.

Stationery,	43 55
Fuel,	16 75
Lights,	33 61
Office rent,	63 67
Postage and telegraph,	23 14
Miscellaneous.....	19 36
Total,	<hr/> \$11,932 88 <hr/>

ABSTRACT OF EXPENDITURES BY RESIDENT ENGINEERS.

ITEMS.	ENLARGEMENT OF ERIE CANAL—EASTERN DIVISION.						CHAMPLAIN CA- NAL.		BLACK RIVER CANAL.		Totals.
	EASTERN SUBDIVISION.				WESTERN SUBDIVI- SION.						
	Cole.	McCam- mon.	Charles.	Bates.	Taylor.	Bates.	Stephen- son.	Charles.	Beach.	Butler.	
Engineering proper,.....	\$10,622 98	\$19,503 93	\$1,049 38	\$1,511 12	\$2,605 38	\$21,782 86	\$2,856 46	\$8,569 62	\$666 09	\$11,732 72	\$80,900 54
Office rent, fuel, lights, & cleaning office	193 78	310 07	32 25	126 79	98 22	666 33	94 37	236 40	11 42	114 11	1,883 74
Stationery, printing and affidavits,	102 37	493 91	61 50	30 88	58 10	442 02	29 62	149 31	7 57	43 55	1,418 83
Postage, telegraph, and express,.....	11 48	59 29	11 20	3 07	21 35	230 39	5 88	68 77	88	23 14	435 45
Gauging water, .....	.....	.....	.....	376 25	.....	.....	.....	.....	.....	.....	376 25
Miscellaneous,	166 04	174 44	.....	6 36	3 39	156 28	13 10	61 54	1 88	19 36	602 39
	\$11,096 65	\$20,541 64	\$1,154 33	\$2,054 47	\$2,786 44	\$23,277 88	\$2,999 43	\$9,085 64	\$687 84	\$11,932 88	\$85,617 20

TABLE No. 1.
SUMMARY OF ENGINEERING EXPENSES.

BY WHOM EXPENDED.	Erie canal.	Champlain canal.	Black River canal.	Total.
D. C. Jenne, division engineer,.....	\$193 57	.....	.....	\$193 57
J. P. Goodsell, do	1,763 90	\$298 62	\$401 95	2,464 47
Spencer Cole, resident engineer,.....	11,096 65	.....	.....	11,096 65
Wm. McCammon, do	20,541 64	.....	.....	20,541 64
S. A. Charles, do	1,154 33	9,058 64	.....	10,239 97
T. H. Bates, do	25,332 35	.....	.....	25,332 35
Wm. B. Taylor, do	2,786 44	.....	.....	2,786 44
J. L. Stephenson, do .....	.....	2,999 43	.....	2,999 43
N. J. Beach, do .....	.....	.....	687 84	687 84
E. W. Butler, do .....	.....	.....	11,932 88	11,932 88
	\$62,868 88	\$12,383 69	\$13,022 67	\$88,275 24

Statement showing the ratio of Engineering Expenses, to the whole amount of work done on the Eastern Division, for the year 1856.

Residents.	Whole amount of engineering expenses.	Amount of work done.	Ratio of engi- neering expenses to amount of work done.
William B. Taylor,.....	\$2,786 44	\$34,648 05	8.04
Spencer Cole,.....	11,096 65	110,790 00	10.0015
Wm. Mc Cammon,.....	20,541 64	135,742 51	15.13
S. A. Charles,	10,239 97	93,239 51	10.91
Thos. H. Bates,.....	25,332 35	369,292 21	6.85
J. L. Stephenson,.....	2,999 43	23,420 00	12.81
E. W. Butler (including N. J. Beach,).....	12,620 72	110,061 00	11.46
	<hr/> \$85,617 20	<hr/> \$877,193 28	
Expenditures by division engineers,	2,658 04	6,462 28	
	<hr/> Total.....	<hr/> \$88,275 24	<hr/> \$870,731 56
		<hr/>	<hr/> 10.13

TABLE No. 2.

Work under existing contracts, let prior to the passage of the act, chap. 329, Laws of 1854.

STATEMENT showing the length in miles, number of structures, character of work, estimated cost at contract prices, amount of work done in 1856, whole amount done, and amount remaining to be done on the Eastern division of the enlargement of the Erie canal.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount of work done in 1856.	Whole am't done.	Amount remaining to be done.
.75	1	Printup's aqueduct,.....	\$31,164 00	\$530 00	\$27,400 00	\$3,764 00
.40	1	Olstona do	55,746 00	3,330 00	55,280 00	466 00
.15	1	Lasher's do	18,359 00	.....	17,980 00	379 00
.91		Section No. 112,.....	20,000 00	7,060 00	19,200 00	800 00
.94		do 117,.....	19,000 00	200 00	17,610 00	1,390 00
.94		do 118,.....	21,400 00	2,580 00	20,400 00	1,000 00
.91		do 120,.....	26,110 00	4,600 00	25,710 00	400 00
.97		do 121,.....	31,000 00	7,170 00	28,790 00	2,210 00
1.02		do 122,.....	19,850 00	2,480 00	17,630 00	2,220 00
6.99	.....	Total,	\$242,629 00	\$27,950 00	\$230,000 00	\$12,629 00

TABLE No. 2.—(CONTINUED.)

BLACK RIVER CANAL.

Existing contracts. Work let prior to the passage of act, chap. 329, Laws of 1854.

No. of structur's	Character of work.	Estimated cost at contract prices.	Whole am't done.	Amount to be done.
3	Locks Nos. 99, 100 and 101,.....	\$9,420 64	\$9,410 00	\$10 64
5	Bridges on sections Nos. 29 and 30,.....	2,465 00	2,120 00	345 00
1	Dam across Black river at Lyon's Falls,	4,240 00	3,940 00	300 00
	Total,	\$16,125 64	\$15,470 00	\$655 64

TABLE NO. 3.

Work under existing contracts, let in pursuance of act, chap. 329, Laws of 1854.

STATEMENT showing the length in miles, number of structures, character of work, estimated cost at contract prices amount of work done in 1856, whole amount done and amount remaining to be done on the Eastern division of the enlargement of the Erie canal.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
1.	Section No. 16,.....	\$19,676 00	\$9,780 00	\$14,140 00	\$5,536 00
1.	do 17,.....	17,580 00	10,800 00	14,080 00	3,500 00
1.	do 18,.....	23,200 00	5,100 00	19,600 00	3,600 00
	7	Bridge abutments on sec. No. 15, 16 and 17, .	9,257 50	6,780 00	8,960 00	297 50
	11	Br'dge supersts on sec. No. 15, 16, 17, 18, 19,	4,980 00	4,380 00	4,380 00	600 00
	1	Lock No. 2,	25,705 00	3,480 00	3,480 00	22,225 00
1.	Section No. 30,.....	27,105 00	13,480 00	20,650 00	6,455 00
1.	do 33 abandoned,.....	4,133 33	13 33	4,133 33	.....
1.	do 33 relet,	19,148 25	5,930 00	5,930 00	13,218 25
.90	do 35,.....	21,728 80	7,610 00	14,960 00	6,768 80
.97	do 37,.....	19,770 00	6,295 00	14,070 00	5,700 00
.57	do 40,.....	10,153 50	3,715 00	7,160 00	2,993 50
4.14	do 41, 42, 43 and 44,.....	15,244 10	5,840 00	7,840 00	7,404 10
2.98	do 45, 46 and 47,.....	22,067 40	8,080 00	8,450 00	13,617 40
4.01	do 50, 51, 52 and 53,.....	21,854 10	9,480 00	9,480 00	12,374 10
3.27	do 54, 55 and 56,.....	31,509 70	17,120 00	17,120 00	14,389 70
1.25	do 57,.....	28,480 00	10,590 00	20,830 00	7,450 00
.93	do 58,.....	29,978 00	3,410 00	16,530 00	13,448 00

1.16	.....	do	59,	20,975 00	7,430 00	16,690 00	4,285 00
.98	.....	do	60,	23,360 00	6,880 00	17,020 00	6,340 00
1.21	.....	do	61,	22,020 00	8,600 00	16,160 00	5,860 00
1.36	.....	do	62,	57,190 00	26,670 00	53,310 00	3,880 00
	1	Lock No. 24,.....		21,962 45	8,270 00	8,270 00	13,692 45
	3	Culverts on secs. Nos. 30, 33, and 34,		6,402 85	5,315 00	5,880 00	522 85
	2	do 35 and 40,		4,885 35	3,295 00	4,660 00	225 35
	3	Br'ge abut's on secs. Nos. 33 and 35,.....		3,780 90	.....	.....	3,780 90
	3	do 36 and 37,.....		3,262 00	673 00	2,762 00	501 00
	2	do 44 and 46,.....		3,180 00	1,050 00	1,050 00	2,130 00
	3 $\frac{1}{2}$	do 51, 52, and 53,..		4,703 40	4,330 00	4,330 00	373 40
	7	do 54 and 55,.....		8,345 50	4,000 00	4,000 00	4,345 50
	1	do 56,.....		2,607 00	.....	.....	2,607 00
	6	do 57, 58, 59, and at Fultonville,..		11,208 00	2,050 00	7,550 00	3,658 00
	5	do 60, 61, and 62,..		6,404 00	2,370 00	5,390 00	1,014 00
	1	Waste wier on section No. 30,		5,410 00	3,750 00	4,810 00	600 00
	3	Iron bridge superstructures, Port Jackson, Fultonville, and foot of lock No. 30,....		5,952 00	2,422 00	2,422 00	3,530 00
	11	Wood bridge superstructures, sections Nos. 31, 32, 33, 35 36, 37, 44 & 46,		4,165 70	1,530 00	1,840 00	2,325 70
	8	do on secs. 53, 54, 55, and 56, ...		3,309 30	1,180 00	1,180 00	2,129 30
	10	do on secs.57,58,59,60,61 and 62,		4,412 40	2,580 00	2,580 00	1,832 40
	1	Valve gate for lock No. 24,.....		379 65	.....	.....	379 65
1.15	.....	Section No. 75,.....		17,511 00	9,330 00	16,640 00	871 00
1.25	.....	do 78 and 2 Rock Rift feeder,....		39,104 00	23,130 00	35,950 00	3,154 00
1.39	.....	do 3 Rocky Rift feeder,.....		11,206 00	9,090 00	9,650 00	1,556 00

No. 60.]

63

No. 3.—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
.60	.....	Section No. 83,.....	\$16,811 00	\$9,220 00	\$10,050 00	\$6,761 00
.99	.....	do 126,.....	43,000 00	22,180 00	37,800 00	5,200 00
1.05	.....	do 127,.....	42,595 00	17,600 00	39,760 00	2,835 50
1.00	.....	do 128,.....	26,200 00	10,550 00	23,700 00	2,500 00
.94	.....	do 129,.....	35,649 00	16,630 00	32,650 00	2,999 00
.80	.....	do 130,.....	28,150 00	6,720 00	26,450 00	1,700 00
.85	.....	do 131,.....	20,751 00	3,330 00	11,310 00	9,441 00
.90	.....	do 132,.....	21,080 00	8,060 00	15,580 00	5,500 00
.91	.....	do 133,.....	18,670 00	8,650 00	12,670 00	6,000 00
	1	Lock No. 34,.....	21,500 00	15,710 00	20,540 00	960 00
	1	do 39,.....	25,550 00	20,280 00	23,120 00	2,430 00
	1	do 40,.....	25,500 00	17,460 00	25,200 00	300 00
	1	do 41,.....	26,500 00	21,170 00	25,300 00	1,200 00
	1	do 42,.....	23,376 00	1,520 00	1,520 00	21,856 00
	5	B'dge abutm's sec.No. 69, 70, 76,.....	10,034 00	5,785 50	7,870 00	2,164 00
	6	do do 77, 79, 80, 84,	8,800 00	5,320 00	7,420 00	1,380 00
	4	do do 104, 106, 113,	10,000 00	6,712 00	7,560 00	2,440 00
	3	do do 111, 115, 121, 122, ..	8,000 00	2,778 00	5,750 00	2,250 00
	4	do do 125, 126, 127, 128, ..	7,210 00	2,900 00	6,960 00	250 00
	3	do do 129, 130, 134 and New London,	6,220 00	734 00	6,070 00	150 00
	4	do do 132, 133,.....	3,869 10	1,890 00	1,890 00	1,979 10

8	Valve gates and fixtures for locks Nos. 30, 32, 34, 38, 39, 40, 41, and 42,	2,973 00	670 00	970 00	2,003 00
2	Waste weirs, sections Nos. 127 and 134,...	7,010 00	160 00	6,680 00	330 00
3	Culverts on secs. No. 112 and 121,.....	4,105 60	370 00	1,580 00	2,525 60
3	do 126 to 128 inclusive,.	5,240 00	1,720 00	4,840 00	400 00
4	do 129, 130, and 134,...	11,320 00	1,500 00	11,020 00	300 00
4	do 131, 132, and 133,...	5,675 90	3,500 00	3,890 00	1,785 90
11	Wood superstruct's for road and farm bridges on secs. 69, 70, 75, 76, 78, & 80,	4,500 00	3,340 00	4,120 00	380 00
9	do 101,102,103,104,106,111	3,367 00	1,470 00	1,570 00	1,797 00
5	do 125, 126, 127, 128, 129, 130, 132, 133, & 134,	1,850 00	1,110 00	1,110 00	740 00
3	Iron superstructures for road bridges at Whitesboro, Ft. Stanwix, and N. London,	6,475 00	630 00	2,320 00	4,155 00
1	Dam across Mohawk at Rome,.....	14,000 00	2,040 00	13,460 00	540 00
2	Dams & b'lk-head, Rocky Rift feed'r,(aban'd)	5,169 75		5,169 75	.....
2	do do (relet,)	10,000 00	9,500 00	9,500 00	500 00
12	Culverts, bridges, towing-path bridge, and drop, Rocky Rift feeder,.....	6,500 00	1,850 00	5,290 00	1,210 00
1	Culvert under Castle creek,	14,324 02	6,992 67	11,279 50	3,044 52
		\$1,175,384 05	\$506,876 50	\$865,906 58	\$309,477 47

TABLE No. 3.—(CONTINUED.)

*Enlarging Locks on Champlain Canal.**Existing contracts let in pursuance of act, chap. 329, Laws of 1854.*

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount of work in 1856.	Whole amount of work done.	Amount remaining to be done.
	3	Combined locks at Whitehall,.....	\$57,000 00	\$21,140 00	\$22,820 00	\$34,180 00
	2	Combined locks at Fort Ann,	52,000 00	18,880 00	48,620 00	3,380 00
	1	Single lock at Fort Ann,	46,000 00	14,080 00	39,800 00	6,200 00
	1	Single lock at Saratoga dam,	50,000 00	21,000 00	25,400 00	24,600 00
	3	Combined locks at Waterford,.....	80,000 00	29,020 00	78,920 00	1,080 00
.....		Valve gates for ten locks,.....	8,500 00	6,080 00	6,080 00	2,420 00
		Totals,.....	\$293,500 00	\$110,200 00	\$221,640 00	\$71,860 00

*Black River Canal.**Work under existing contracts, let in pursuance of act, chap. 329, Laws of 1854.*

	1	Chub Lake reservoir, abandoned,.....	\$60 00	.....	\$60 00	.....
	1	South branch do do	185 70	.....	185 70	.....
1.01	.....	Section No. 30,.....	10,000 00	.....	9,750 00	\$250 00
1.06	.....	do 31,.....	31,000 00	\$1,670 00	30,510 00	490 00
	3	Locks No. 103, 104 and 105,.....	3,850 00	.....	3,530 00	320 00
	2	do 106 and 107,	2,500 00	90 00	2,390 00	110 00
	1	Guard lock for Delta feeder,	8,700 00	7,500 00	7,500 00	1,200 00
	3	Culverts for Delta feeder,.....	1,200 00	1,170 00	1,170 00	30 00

.8	2	Bridges on section No. 31,	2,450 00	200 00	2,350 00	100 00
	1	North branch reservoir,	33,800 00	15,000 00	33,220 00	580 00
34.5	.....	Improvement of Black river,	56,000 00	26,520 00	34,000 00	22,000 00
	.....	do do	91,000 00	28,330 00	31,300 00	59,700 00
1 ³	1	Woodhull reservoir,	17,550 00	4,030 00	9,530 00	8,020 00
	1	Chub lake reservoir,	27,700 00	7,490 00	7,490 00	20,210 00
	1	South branch reservoir,	19,750 00	7,490 00	7,490 00	12,260 00
	.....	Section work for Delta feeder,	10,200 00	8,230 00	8,230 00	1,970 00
	4	Bridges for Delta feeder,	1,660 00	600 00	600 00	1,060 00
			\$317,605 70	\$108,320 00	\$189,305 70	\$128,300 00

SUMMARY OF WORK, ENLARGEMENT OF ERIE CANAL.

Items,	Estimated cost at contract prices.	Am't done in 1856 at contract prices.	Whole amount done at contract prices.	Am't remain'g to be done at con't prices	Cost to complete ex. of land damages.
Work let prior to Laws of 1854,.....	\$242,629 00	\$27,950 00	\$230,000 00	\$12,629 00	\$12,629 00
do do under Laws of 1854,	1,175,283 00	506,876 00	850,506 00	324,777 00	324,777 00
Settled contracts, .....	.....	115,644 00	.....	.....	.....
Fifteen per cent. retained, .....	.....	.....	.....	.....	127,575 00
Engineering and contingencies, .....	.....	.....	.....	.....	67,481 00
*Work not under contract,	40,000 00	.....	.....	40,000 00	40,000 00
Total,	\$1,457,912 00	\$650,470 00	\$1,080,506 00	\$377,406 00	\$572,462 00

* The above estimate is for constructing a new dam for Schoharie creek feeder.

SUMMARY OF WORK ON CHAMPLAIN CANAL.

ITEMS.	Estimated cost at contract prices.	Am't done in 1856 at contract prices.	Whole amount done at contract prices.	Am't rem'ing to be done at cont. prices.	Cost to compl'te exclusive of land damages.
Work let under laws of 1854,.....	\$293,500 00	\$110,200 00	\$221,640 00	\$71,860 00	\$71,860 00
do do head of repairs,.....	6,459 51	6,459 51	6,459 51	.....	.....
Contingencies and engineering,.....	.....	.....	.....	.....	14,372 00
Whitehall locks, abandoned contract,..	17,895 60	.....	17,895 60	.....	.....
Fifteen per cent. retained,.....	.....	.....	.....	.....	33,246 00
*Work not under contract,.....	104,700 00	.....	.....	104,700 00	104,700 00
Total,.....	\$422,555 11	\$116,659 51	\$245,995 11	\$176,560 00	\$224,178 00

*N. B. The above estimate is for rebuilding the two junction locks below Cohoes, and the north guard lock at the Mohawk river.

SUMMARY OF WORK ON BLACK RIVER CANAL AND IMPROVEMENT OF BLACK RIVER.

Items.	Estimated cost at contract prices.	Am't done in 1856 at contract prices.	Whole amount done at contract prices.	Am't remain'g to be done at con't prices.	Cost to complete ex. of land damages.
Work let prior to Laws of 1854,.....	\$16,126 00	.....	\$15,470 00	\$656 00	\$656 00
do under do do	317,360 00	\$108,320 00	188,250 00	129,110 00	129,110 00
Settled contracts,.....	.....	1,741 00	.....	.....	.....
Fifteen per cent. retained,.....	.....	.....	.....	.....	28,237 00
Engineering and contingencies,.....	.....	.....	.....	.....	25,953 00
Total,.....	\$333,486 00	\$110,061 00	\$203,720 00	\$129,766 00	\$183,956 00

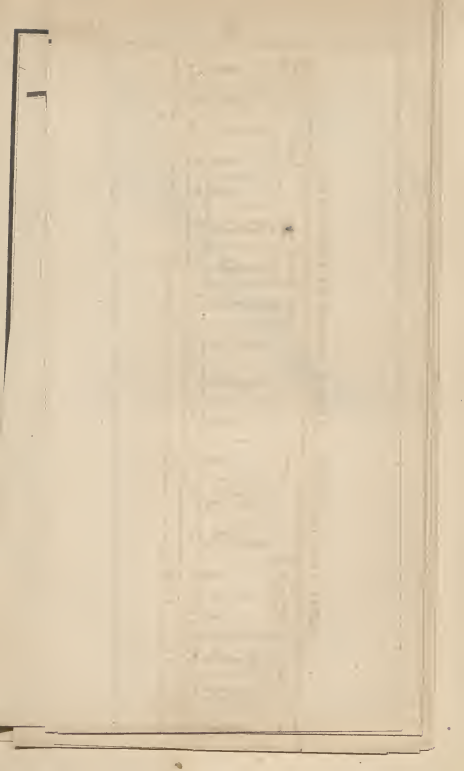
TABLE NO. 4.

*Abstract of materials delivered and estimated to Contractors on
Eastern Division.*

Erie Canal Enlargement,	\$57,384 81	
Champlain,	34,580 83	
Black River,	23,426 66	
	<hr/>	\$115,392 30
		<hr/> <hr/>

CANAL AND STRUCTURES—EASTERN DIVISION OF ERIE CANAL.

CANALS IN MILES.			FEEDERS IN MILES.		LOCKS.					AQUEDUCTS.		CULV'TS.	WASTE WEIRS.	BRIDGES.				WEIGH LOCK HOUSES
Enlarged and completed.	In process of enlargement.	Old canal in use.	New.	Old.	Double and enlarged.	Single and enlarged.	Guard.	Weight.	Old remaining.	With arches.	Without arches.	Single and double.	Towing-path & berme side.	Road.	Farm.	Towing-path.	Suspension.	Brick.
105.872	27.708	8.00	4.51	.95	43	7	2	3	4	18	3	86	10	99	95	1	1	3
133.58		8.00	5.46		59					21		86	10	196				3



((MAP))
OF THE
CHAMPLAIN CANAL
and its

((CONNECTIONS))

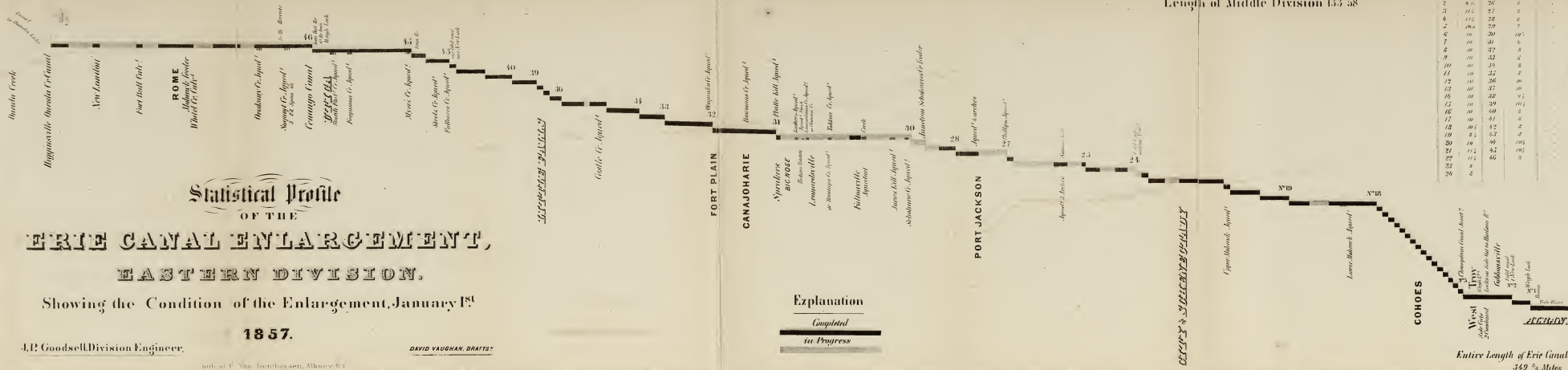
JF Goodsell Dr^o Eng David Vaughan Dr^o 1857

Lith of C Van Tassell from Allings NY



List of Locks

				all up from below
1	10 1/2	2.5	2	
2	9 1/2	2.6	2	
3	11 1/2	2.7	0	
4	11 1/2	2.8	2	
5	10 1/2	2.9	7	
6	10	3.0	10 1/2	
7	10	3.1	6	
8	10	3.2	3	
9	10	3.3	6	
10	10	3.4	5	
11	10	3.5	2	
12	10	3.6	10	
13	10	3.7	10	
14	10	3.8	9 1/2	
15	10	3.9	10 1/2	
16	10	4.0	2	
17	10	4.1	3	
18	10 1/2	4.2	2	
19	2 1/2	4.3	2	
20	10	4.4	10 1/2	
21	11 1/2	4.5	10 1/2	
22	11 1/2	4.6	3	
23	8			
24	2			



MIDDLE DIVISION.

REPORT OF O. C. HARTWELL, DIVISION ENGINEER, 1856.

DIVISION ENGINEER'S OFFICE, }
SYRACUSE, January, 1857. }

HON. S. SEYMOUR, *State Engineer and Surveyor* :

Sir—In compliance with your instructions, I herewith submit the annual report required from this department, showing the number and compensation of persons employed in the engineering department during the preceding year; also the condition and progress of the enlargement of the canals included in the middle division for the year 1856.

The canals and river navigation embraced in this division are as follows :

	Miles.
Erie canal from the east side of the Oneida Lake	
canal to the east line of Wayne county,..	68.58
Navigable feeders.—Limestone feeder,.....	.80
Butternut do 	1.55
Camillus do 	1.00
	<hr/>
Oneida Lake canal,.....	6.
Oswego canal,.....	38.
Oneida River improvement,.....	20.
Seneca River towing path,.....	5.
Baldwinsville canal,.....	1.
Cayuga and Seneca canal,.....	22.77
Crooked Lake do 	8.
Chemung canal and feeder,.....	39.
Cayuga inlet,.....	2.
Chenango canal,.....	97.
	<hr/>
Total of middle division,.....	310.70

This portion of the canals and river navigation is divided into three subdivisions or residencies.

The first or eastern residency was under the charge of M. C. Fremyre as resident engineer to May 15th, and of Daniel Richmond as resident engineer since that time. It includes the Erie canal from the Oneida Lake canal to the village of Jordan, a distance of 51.22 miles; the Oneida Lake canal 6 miles; the Chenango canal 97 miles. Total length of canals 154.22 miles; together with the feeders and reservoirs connected therewith.

The second or western residency was under the charge of Ogden Edwards as resident engineer, to February 10th, and of W. L. Kidder as resident engineer since that time. It includes the Erie canal from the village of Jordan to the east line of Wayne county, a distance of 17.36 miles; the Cayuga and Seneca canal 22.77 miles; the Crooked Lake canal 8 miles; the Chemung canal and feeder 39 miles, and the Cayuga inlet 2 miles. Total length 89.13 miles; together with the feeders connected therewith.

The third or Oswego residency is under the charge of M. S. Kimball as resident engineer, and includes the Oswego canal 38 miles; the Oneida river improvement 20 miles; the Seneca river towing path 5 miles, and the Baldwinsville side cut 1 mile. Total length 64 miles.

The expenditures in the engineer department for the year were :

Erie canal Enlargement.

First resid'ney by M. C. Fremyre, resd't	\$6,883	26
do Daniel Richmond, do	9,524	41
Second do Ogden Edwards, do	1,350	91
do W. L. Kidder, do	11,484	53
V. R. Richmond, divis'n engin'r, salary	267	65
do do travel	100	50
O. C. Hartwell, do salary	1,009	15
do do travel	437	52
<hr/>		
Amount carried forward,.....	\$31,057	93

Amount brought forward,..... \$31,057 93

Enlargement of the Cayuga and Seneca canal.

By Ogden Edwards, resident,	\$1,061 15	
By W. L. Kidder, do	7,077 56	
O. C. Hartwell, divis'n engin'r, salary,	342 72	
do do travel,	147 48	
		8,628 91

Enlargement of the Oswego canal.

By M. S. Kimball, resident engineer,	\$15,415 80	
O. C. Hartwell, divis'n engin'r salary,	383 10	
do do travel,	175 74	
		15,974 64

Repairs of the Crooked Lake canal.

By Ogden Edwards, resident engineer,	\$48 44	
By W. L. Kidder, do	374 00	
		422 44

Repairs of the Chemung canal and feeder.

By Ogden Edwards, resident engineer,	\$39 84	
By W. L. Kidder, do	802 11	
		841 95

Total engineering expenses on the middle division

for the year 1856,..... \$56,925 87

The number of persons employed in the engineering department, on this division on the 31st day of December, 1856, was as follows :

	Residences.			
	1st	2d	3d	Total.
Resident engineers,.....	1	1	1	3
First assistant engineers,.....	2	3	2	7
Second do	2	4	1	7
Levellers and surveyors,.....	4	5	3	12
Draughtsman and clerks,.....	2	2	3	7
Rodmen,.....	2	3	2	7
Tapemen and chainmen,.....	0	0	0	0
Axemen	2	3	0	5
Inspectors,.....	2	3	2	7

The annexed statement, (No. 1) shows the names, rank, time of service, and compensation of the engineers and assistants who have been employed on each residency during the year 1856.

The annexed statements (Nos. 2 and 3) show the length, number of structures, and estimated cost of work under contract; with the amount of work done, and the amount remaining to be done on each residency.

The annexed statement (No. 4) shows the length, number of structures, estimated and actual cost of work which has been completed, and contracts cancelled : let in pursuance of act, chap. 329, Laws of 1854.

The expenditures on the middle division, for the year 1856, have been as follows :

Erie canal.

<i>Eastern residency.</i>	For construction,..	\$227,945 49	
	For engineering,..	16,407 67	
			\$244,353 16
<i>Western residency.</i>	For construction,..	\$163,393 29	
	For engineering,..	12,835 44	
			176,228 73
Add salary and travel of division engineer,.....			1,814 82
Total,			\$422,396 71

Cayuga and Seneca canal.

For construction,	\$174,102 17	
For engineering,	8,628 91	
		182,731 08

Oswego canal.

For construction,	\$262,915 75	
For engineering,	15,974 64	
		278,890 39
Total for enlargement,		884,018 18

Repairs of the Erie canal.

For constructing Cazenovia lake reservoir,	7,060 00
--	----------

Repairs of the Chemung canal and feeder.

For construction,	\$6,445 01	
For engineering,	841 95	
		7,286 96

Repairs of the Crooked Lake canal.

For construction,	\$2,030 00	
For engineering,	422 44	
		2,452 44

Amount carried forward,\$

Amount brought forward,.....

Repairs of the Chenango canal.

Iron bridge superstructure at Oxford,..... 1,590 00

Total expenditures on the middle division, for
the year 1856,..... \$902,407 58

The amount of work done since January 1st, 1854, is as follows :

Erie canal.

On contracts let prior to the passage of
act, chap. 329, Laws of 1854, \$95,125 78
On contracts let in pursuance of said
act,..... 923,297 63
-----\$1,018,423 41

Cayuga and Seneca canal.

On contracts let prior to the passage of
act, chap. 329, Laws of 1854, \$36,320 42
On contracts let in pursuance of said
act, 381,143 23
-----417,463 65

Oswego canal.

On contracts let prior to act, chap. 329,
Laws of 1854, \$397,401 53
On contracts let in pursuance of said
act,..... 504,823 12
-----902,224 65

Total amount done to Jan. 1, 1857,.....\$2,338,111 71

There has been paid on work done since January 1st 1854, as follows :

Erie canal.

On contracts let prior to the passage of
act, chap. 329, Laws of 1854, \$95,125 78
On contracts let in pursuance of said
act,..... 822,452 00
-----\$917,577 78

Amount carried forward,.....

Amount brought forward,.....

Cayuga and Seneca canal.

On contracts let prior to the passage of act, chap. 329, Laws of 1854,.....	\$36,320 42
On contracts let in pursuance of said act,	331,092 31
	<hr/> \$367,412 73

Oswego canal.

On contract, let prior to the passage of act, chap. 329, Laws of 1854,.....	\$397,401 53
On contracts let in pursuance of said act,	431,590 45
	<hr/> 828,991 98
Total amount on contracts to Jan. 1, 1857,.....	<hr/> <hr/> \$2,113,982 49

All of the work necessary to complete the enlargement of the middle division of the Erie canal, the Oswego, and the Cayuga and Seneca canals is now under contract; except the valve gates for lock No. 51, Erie canal; the extension of Limestone creek feeder at Fayetteville; the rebuilding of the old State dam on section No. 10, and the rebuilding of the dam and construction of a guard wall on section No. 9, Cayuga and Seneca canal, and the construction of a reservoir to supply the Rome or long level with water at its west end.

The estimated cost of work not under contract, is as follows, to wit:

Valve gates for lock No. 51,.....	\$1,000 00
Extending Limestone creek feeder,.....	12,000 00
Rebuilding dam sec. No. 10, C. and S. canal,	7,000 00
do and guard wall sec. No. 9 do,....	13,000 00
Constructing reservoir,.....	120,000 00
Total work not under contract,.....	<hr/> <hr/> \$153,000 00

The estimated cost of completing the work under contract at contract prices is as follows:

Erie canal.

Work under contract let prior to the passage of act, ch. 329, Laws of 1854,	\$5,730 81	
Work let in pursuance of said act,...	364,239 32	
	<hr/>	
	\$369,970 13	
Add 10 per cent. for contingencies,	36,997 01	
Add for engineering,.....	35,000 00	
	<hr/>	\$441,967 14

Cayuga and Seneca canal.

Work let prior to act, chap. 329, Laws of 1854,.....	\$566 05	
do in pursuance of do	228,559 88	
	<hr/>	
	\$229,125 93	
Add 10 per cent. for contingencies,.	22,912 59	
Add for engineering,.....	15,000 00	
	<hr/>	267,038 52

Oswego canal.

Work let prior to act, chap. 329, Laws of 1854,.....	\$29,837 14	
do in pursuance of do	509,023 81	
	<hr/>	
	\$538,860 95	
Add 10 per cent. for contingencies,.	53,886 10	
Add for engineering,.....	30,000 00	
	<hr/>	622,747 05
	<hr/>	
Total cost to complete work under contract,...	1,331,752 71	
Add work not under contract,.....	153,000 00	
	<hr/>	\$1,484,752 71
Add percentage retained on work done as per terms of contract: Erie canal,.....	\$100,845 63	
Cay. & Sen.,.....	50,050 92	
Oswego.....	73,232 67	
	<hr/>	224,129 22
	<hr/>	
Total to complete middle div. and cancel cont's,	\$1,708,881 93	

These estimates, it is believed, will cover the cost, at present contract prices, of completing the middle division of the Erie canal, the Oswego, and the Cayuga and Seneca canals, with the exception of land damages, and the removal of buildings.

ERIE CANAL.

The enlargement from the east side of the Oneida Lake canal to Chittenango, a distance of 16.99-100 miles, embracing sections from 135 to 151, inclusive, and the structures thereon, was, by the terms of the contracts, to have been completed by the first day of April, 1856. Owing to the severity of the winter, and lateness of the spring, none of the contracts were completed until during the summer. There has been completed and settled 3.72-100 miles of canal, 12 culverts, 15 bridge abutments, 5 iron bridge superstructures, Chittenango creek aqueduct, 1 waste weir, and 1 dam and guard gate. There has also been completed and brought into use, but not settled, 8 culverts, 10 wood bridge superstructures, 2 dams and guard gates on Chittenango and Limestone creek feeders, and two waste weirs on Limestone and Butternut creek feeders.

The line of the canal from the Oneida Lake canal to New Boston, a distance of 13.65-100 miles, with the exception of about one mile west of Canastota, was so far completed as to be brought into use last spring. The entire line from the Oneida Lake canal to Chittenango, will be brought into use at the opening of navigation the coming spring, and the mechanical structures will be completed.

From Chittenango to Jordan, a distance of 34.23-100 miles, the enlarged canal is completed and in use. The structures on this portion of the line are 4 double lift locks, 1 weigh lock, 5 aqueducts, 14 culverts, 33 bridges, and 3 waste weirs.

From Jordan to Port Byron, a distance of 8.4-10 miles, the line for the enlarged canal is located, independent of the old canal, on a level of 5.6-10 feet lower. No portion of this part of the line can be used until the entire line is completed between these points, except about one-fourth of a mile through the vil-

lage of Weedsport, where the line occupies the bed of the old canal. This portion is completed, and was in use the last season, by raising the banks an extra height, to retain the water.

By the terms of the contracts for that portion of the canal between Port Byron and Jordan, it was to have been completed by the first day of April last; but the work was not prosecuted from the date of the contracts with reference to their completion by the time specified; consequently, the line of the old canal had to be used last season, very much to the detriment of navigation. Delays have occurred in the progress of the work through the village of Port Byron, in consequence of an injunction having been granted by the Supreme Court, on the 26th day of August last, restraining the letting board from entering into contract with Elon St. John & G. W. Laraway (they being the lowest bidders) to construct the Port Byron aqueduct, on the line adopted by the Canal Board, on the 26th day of June, 1856, as per following preamble and resolution:

“Whereas this Board, on the 11th day of April last, adopted a resolution locating the line of the Erie Canal through the village of Port Byron, where the same was originally located by this Board May 3rd, 1850, and the work for the construction of said canal was duly let; and whereas the State Engineer and Surveyor has this day filed in this office a new map of said canal through said village, and recommended a slight change in the line of said canal, and an estimate of the cost of enlargement as proposed:

“*Resolved*, that the line of the canal through the village of Port Byron, as recommended by the State Engineer and specified on said map be, and the same is hereby adopted.

“And it is further resolved that the contractor for the work on said enlargement be authorized to carry on the work on said new line by his signifying his acceptance thereof in lieu of his other contract or contracts in writing, in the manner proposed by law; and in case said contractor refuses thus to accept the work upon the new line, that the contracting board proceed at once to relet said work upon said new line.”

The contractors were duly notified of the above resolutions and requested to proceed with their work. The contractors for the section work signified their assent and commenced work, but the contractors for the construction of the Port Byron aqueduct refused to comply. Accordingly, on the 31st day of July, the letting board declared their contract abandoned, and advertised the same to be relet on the 26th day of August. At the meeting of the letting board to award the contract they were served with an injunction by W. H. Bowman & Co., the original contractors, which has delayed the construction of the aqueduct to the present time. The injunction is yet continued, and nothing has been done upon the aqueduct the past year. The line therefore of the old canal will have to be used the next season. The structures on that portion of the canal, between Jordan and Port Byron, consists of 1 double lock, 2 aqueducts, 9 culverts, 12 bridges, and 1 waste weir; of which there has been finished 9 culverts, 7 bridge superstructures, 1 aqueduct, 1 double lock (No. 51, with the exception of valve gates,) and 7 bridge abutments.

The new canal between Port Byron and the east side of Clyde river, a distance of 5.31 miles, is completed (except a portion of the slope wall on the berm of section No. 199,) and has been in use the past season. It consists of sections 198, 199, 200, 201, 202, Seneca river aqueduct, and east half of section 203. The structures consist of 1 double lock, 2 aqueducts, 3 culverts, 6 bridges, including an iron foot bridge at Montezuma, and 1 single wood lock, which are all completed. The navigation was much improved by bringing into use last spring section 202, east half of section 203, and the Seneca river aqueduct. Navigation has heretofore been much delayed by the difficulty experienced in crossing the Seneca river in low water. During the past season, the low stage of water in Seneca river would have rendered it extremely difficult to have sustained navigation, the Cayuga and Seneca lakes and their outlets being lower than for many years previous.

The canal from the east side of the Clyde river to the Wayne county line, was put under contract, on the 27th day of August,

1855, and by the terms of the contracts was to be completed on the first day of April, 1858. The distance is 3.65-100 miles and includes the west half of section 203, 204, 205 and 206; 2 culverts and a road and change bridge. There has been but very little done on this portion of the canal, except on sections 204 and 205. The greater portion of the excavation and embankment on section 204, has been completed. About one half of section 204 was located on the Cayuga marshes, the surface of which is from three to four feet below the bottom line of the canal. The west half of section 203 is entirely on the marsh. The quantity of embankment estimated for this section is 180,000 cubic yards, all of which is to be hauled an average distance of over three-quarters of a mile. The contractor for this section is now progressing with the embankment with as large a force as can be worked to advantage.

The Canal Board on the 17th day of October last, allotted to the middle division of the Erie canal \$303,000 of the money appropriated to the enlargement of the Erie canal for the fiscal year commencing October 1st, 1856. This amount being too small to finish the contracts, it was deemed advisable not to suspend any portion of the work, but to confine the expenditures to the necessary excavation and embankment, and finishing the tow path so far as to secure navigation throughout the entire line as soon as practicable for five feet depth of water. Accordingly the contractors were notified that there would be no more slope wall estimated to them on the berm side of the canal, until further means should be provided by the State.

CAYUGA AND SENECA CANAL.

This canal extends from the Erie canal at Montezuma to the Seneca lake at Geneva; with a branch to the foot of Cayuga lake at East Cayuga. The distance from Montezuma to Geneva is 20.71-100 miles. The branch to East Cayuga 2.06-100. Total length, 22.77-100 miles. The new structures upon this canal are 11 composite locks; a side lock at Seneca falls; 9 culverts; 16 bridges and 4 stone dams, of which there have been completed, all of the locks, 9 bridges, 9 bridge abutments and 6 culverts.

By the terms of existing contracts the work was to be completed on the first days of April, 1856, 1857 and 1858 respectively. The work on most of the contracts has progressed somewhat slowly, in consequence of the limited amount of means available for that purpose. The appropriation for the fiscal year ending September 30th, 1856, was exhausted about the first of July; at which time a portion of the contractors suspended operations, while others continued their work, receiving drafts payable on the 20th of October, 1856. On the first of November the appropriation for the fiscal year ending September 30th, 1857, was found to be exhausted, except \$23,430.15-100, an amount too small to prosecute the work on all of the contracts. Notice was therefore given to all of the contractors, except for the dam and guard gate at Seneca falls, and pier at Geneva, (work which for maintenance of navigation could not be dispensed with,) that no further estimates would be made on their contracts after paying for work done in October, until further means should be provided. The dam and guard gate, and the pier have progressed nearly to completion.

The work that was done during the last winter at Waterloo so improved the navigation at that place that there has been no difficulty there during the entire season; and the completion of the dam at Seneca falls by the opening of navigation next spring, will secure good navigation at that point and discontinue the use of the Chamberlain lock, which is the only obstruction to the passage of the large class of boats to Jefferson, at the head of Seneca lake. There will be none of the section work completed on the opening of navigation next spring, as the work is suspended for want of funds.

By a comparison of the estimates for the Cayuga and Seneca canal, with those reported last year, it will be seen that they are increased by the sum of \$111,177.72. The dam on section No. 10 has been extended some 300 feet further than it was intended to have been built at the time of letting; the number of bridges has been increased, and the cost of the iron bridge at Virginia street, Waterloo has been increased in consequence of a change of plan by a resolution of the Canal Board.

At the time of giving notice to the contractors in November, that no further payments could be made upon the Cayuga and Seneca canal, I caused all of the work to be accurately measured up, with a view to a suspension of the work, should such an event become necessary. Those final measurements increase the quantities upon the different items of earth and rock excavation, embankment, slope and vertical wall, and timber upon the sections; and timber and iron upon the structures. The progress of the work has shown the estimates to have been originally much too low.

OSWEGO CANAL.

There has been completed and brought into use the past season, the abutments and iron superstructures of Salina and Willow-street bridges, in the city of Syracuse; the abutments and wooden superstructures of bridges at Green Point and Mud Lock, on the Liverpool level, and Van Buren bridge, three miles below Fulton.

One large culvert at Liverpool; and three small culverts at Phoenix have also been completed.

The stone dam at Oswego, together with the work of enlarging the lock and putting in new bulkheads to the Varick canal, at the west end, is nearly completed.

Sections 1, 2 and 3, at Syracuse, and 17 and 18, at Phoenix, will be completed and brought into use at the opening next spring.

Navigation has been much improved on many other portions of this canal, by the work in progress, although but partially completed.

In compliance with a resolution of the Canal Board, of October 16th, the expenditures since that time have been made with strict reference to bringing the largest possible amount of enlarged canal into practical use. But little can be done, however, as the contracts generally require so much work before they can be left, as to absorb the remainder of the appropriation without perfecting much. Indeed, should a suspension of any consider-

able time be had now, it would require from \$50,000 to \$100,000 to prepare the canal to withstand it properly.

Much of the work of enlarging this canal is connected with the river. In most cases the progress of the work during the suspension of navigation, depends wholly upon the preparation made during the previous summer.

On sections 14, 15, 16 and 17, the whole summer has been consumed by the contractors in building coffer-dams, and otherwise preparing to prosecute their work the present winter. On sections 14 and 15, a new channel for boats has been opened, at considerable expense, and used for several weeks before the close.

In leaving such work to withstand a suspension, losses will inevitably accrue to the State, in repairing and rebuilding coffer-dams and their protections at the resumption. Nor is this all. Should the coffer-dams, now used for the tow-path, fail, resort must be had to the old tow-path, and the old channel, already much broken up, and which would require a large expenditure to prepare for use. Much danger is to be apprehended, lest in the event of the coffer-dams being carried out by floods, it would fill up the old channel and blockade navigation. This would happen at such a period as to almost entirely preclude the idea of repairing, ready for navigation, on account of the want of time between the breaking up of the ice and the soon following opening to do the work.

Guard lock No. 2 has not yet been rebuilt; part of the foundation is laid and the masonry commenced. Owing to the close proximity to the old lock, frequent breaks occurred in the bank between. Work was therefore suspended upon it, which has been resumed since the close of navigation. On emptying the canal level below, a break made its appearance, coming up directly within the braces of the upper mitre-sill of the old lock. A coffer dam was thrown across the head above the foundation, but it only served to shut it off at this point, to make its appearance gushing into the lock on each side just below the hollow quoins of the upper gates. This has been stopped by digging

out and puddling in the rear. The inside planking reduced so thin by paring off, to get the enlarged width two years ago, is considerably broken and gone. Some fears may be reasonably entertained as to the safety of this lock for another season's navigation.

All of the timber and part of the stone for the new lock are on hand, and the contractor is driving it rapidly, to complete at an early day next season. With a delay of a few days to navigation, the new lock could be brought into use as soon as finished.

From the uncertainty of finding such foundations and materials as must enter into the engineer's calculations for under water work, the ultimate cost is likely to be raised. Much of the work upon the Oswego Canal is of this nature. The present estimates show an increased cost, as compared with last year, of \$3,633.80.

At the time of making surveys in 1848, locating new locks of the enlarged size, the following facts appeared. To obtain 7 feet of water on the river level extending from Phoenix to Mud lock, ten miles above, it was found impracticable to raise the surface in the least, as already much inconvenience was felt along this river level, extending up the Oneida to Oak Orchard, the Seneca to Baldwinsville, and the Onondaga lake to Syracuse, from the already alleged extra height at which the water was held by flush-boards put upon the dam at Phoenix during the seasons of navigation. On examination, however, it was found that the old dam had become much settled, and the flush-boards were necessary to sustain navigation, although kept at a little extra height. This dam has since been rebuilt and brought up to the required height. Owing to the above facts and circumstances, the location of the lock at Phoenix seemed to be clearly pointed out, to wit: to be put down 3 feet to obtain the 7-foot water which has been done.

Mud lock at the upper end of this level, enlarged in 1836, was found to have been placed one and a half feet higher than the lock at Phoenix, giving a fall of one and a half feet on the surface, unless a greater depth than seven feet should be had at

Phoenix, which has been shown to be impracticable. This fall occurs at what is known as "Gascon Rapids," four miles above Phoenix. It is believed that the enlargement will have the effect to increase the difficulties to navigation at this point, in such portions of the season that the enlarged channel would draw down the surface above, causing an increased flow, through the cut. It must now be borne in mind that the lock above built in 1836 will not allow any material reduction of the surface, and at the same time maintain seven feet water on the lower mitre sill. Here then is a double difficulty, one of making too much current by drawing down the surface, and the other that Mud lock will not allow of a reduction. In view, therefore, of perfecting the navigation at this point, estimates have been made for a lock at the foot of Gascon, to be built of rubble masonry.

There is now in progress work at the foot of Onondaga lake which, when done, will lower its surface about eighteen inches. To avoid all danger of setting the water back again into the lake, it is proposed to clear out and widen the remaining channel of the river opposite; all of which is estimated to cost \$46,152. This improvement is recommended in the belief that it will be found indispensable to the safe and economical navigation of the canal at this point.

During all former time in addition to the hazard and delay caused by these difficulties, boatmen have been subjected to a tax of from fifty cents to one dollar for additional towing expenses up this current. With enlarged boats this expense must be increased,

Respectfully submitted,

O. C. HARTWELL,

Division Engineer.

1st

1. DRAF

3
1
3
1
1
1
3

do	rodman,.....	95	1 50	142 50
do	travel,.....			2 98

Wayne Co Western Divisⁿ

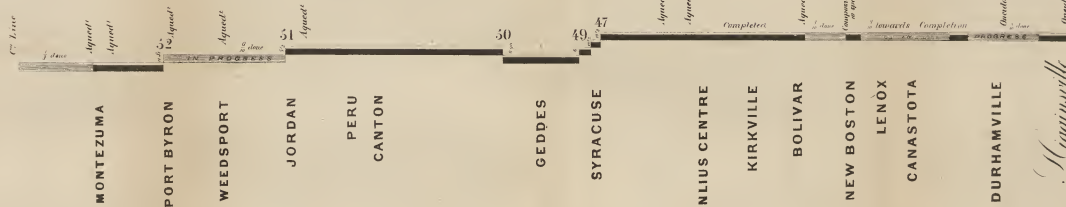
Profile of THE E R I E C A N A L MIDDLE DIVISION.

Showing the Condition of the Enlargement January 1st

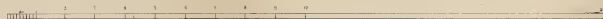
1857.

DAVID VAUGHAN, DRAFTS^m

14th of C Van Rensselaer, Albany, N.Y.



Scale 3 m^s in an inch



Lift of Locks.

Up from Albany	Down from Albany
47	10 1/2 ft
48	10 1/2
49	6
50	6.50
51	5 1/2
52	11
	6.90
	4.3 1/2
	6.90
	36 6 down

Middle Division M^s 68.58.



Canal Completed
in Progress.

to towards Completion & No on

Hogansville
Eastern Division

TABLE NO. 1.

Statement showing the names, rank, period of service, and compensation of the engineers and assistants who have been employed on the Middle division of the enlargement of the New-York State canals, during the year 1856.

EASTERN RESIDENCY—ERIE CANAL.

M. C. FREMYRE, *Resident Engineer.*

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
M. C. Fremyre, resident engineer,.	4½ms	\$1,700	\$634 59
do do travel,			237 18
O. H. Bogardus, first ass't engineer,	117	4 00	468 00
D. R. Hartwell, do do	117	4 00	468 00
Daniel Richmond, second do	117	3 50	409 50
do do travel,			12 50
C. L. Loomis, second ass't engineer	117	2 75	321 75
E. W. Clift, do do	78	2 75	214 50
M. Van Brocklin, do do	39	2 75	107 25
H. C. Merrick, do do	39	2 75	107 25
do leveller and assistant,	78	2 50	195 00
H. D. Brockway, leveller,.....	117	2 00	234 00
Thos. F. Wright, do	78	2 00	156 00
D. E. Whitford, do	117	2 00	234 00
W. Wallace Lee, do	117	2 00	234 00
J. W. Smith, assistant do	39	1 75	68 25
G. H. Leavenworth, do do	78	1 75	136 50
C. W. Downes, do do	39	1 75	68 25
do axeman,	78	1 50	117 00
do travel,.....			19 56
James Burke, draughtsman,	117	2 75	321 75
D. G. Bushnel, clerk,.....	22	2 00	44 00
do rodman,	95	1 50	142 50
do travel,.....			2 98

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
Gifford Startevant, rodman,.....	117	1 50	\$175 50
R. A. Hartwell, do	32	1 50	48 00
Amos Kinnee, axeman,.....	117	1 50	175 50
W. T. Denison, do	27	1 37½	37 12
J. O. Pierce, clerk,.....	95	2 00	190 00
do travel,.....	.		11 00
J. B. Woodford, inspector	70	2 00	140 00
Lee Wells, do	59	2 00	118 00
R. G. Joy, do	117	2 00	234 00
Malachi Tehan, do	78	1 75	136 50
W. L. Crossett, do	117	1 75	204 75
Lucien Hale, do	15	2 00	30 00
Nathaniel West, do	25	2 00	50 00
Isaac F. Hill, do	39	2 00	78 00
			<hr/>
			\$6,582 68

Incidental expenses.

Office rent,.....	47 62
Stationery,.....	40 88
Postage,	20 80
Telegraph,	19 77
Fuel,.....	99 93
Light,.....	29 70
Labor	9 50
Affidavits,	28 38
Miscellaneous,.....	4 00
<hr/>	
Total,	\$6,883 26
<hr/>	

TABLE No. 1.—(CONTINUED.)

Statement showing the names, rank, period of service, and compensation of the engineers and assistants who have been employed on the Middle division of the enlargement of the New-York State canals, during the year 1856.

EASTERN RESIDENCY—ERIE CANAL.

DANIEL RICHMOND, Resident Engineer.

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
Daniel Richmond, resident eng'r,...	7½ m.	\$1,700 00	\$1,065 41
do travel,			229 38
D. R. Hartwell, first ass't engineer,	197	4 00	788 00
M. Van Brocklin, do do	197	4 00	788 00
D. E. Whitford, second ass't do	197	2 75	541 75
H. C. Merrick, do do	197	2 75	541 75
E. G. Nye, ass't eng'r and clerk,...	123	3 00	369 00
H. D. Brockway, leveler,	197	2 00	394 00
W. W. Lee, do	197	2 00	394 00
J. W. Smith, do	197	2 00	394 00
C. W. Downs, do	197	2 00	394 00
W. S. Nearing, surveyor,	42	3 50	147 00
James Burke, draughtsman,	197	2 75	541 75
R. A. Hartwell, rodman,	197	1 50	295 50
W. T. Denison, do	145	1 50	217 50
M. L. Cooper, do	144	1 50	216 00
Gifford Sturtevant, do	26	1 50	39 00
D. G. Bushnell, do	52	1 50	78 00
do clerk,	74	2 00	148 00
V. M. Gardner, do	54	2 00	108 00
Charles Reals, axeman,	131	1 25	163 75
Heman Swift, do	9½	1 00	9 50
G. W. Ayer, do	3	1 25	3 75
Lyman Higley, do	28	1 25	35 00
R. G. Joy, do	131	1 25	163 75
W. L. Crossett, inspector,	39	1 75	68 25
Geo. King, do	171	2 00	342 00
Nathaniel West, do	177	2 00	354 00
Isaac F. Hill, do	93	2 00	186 00
R. G. Joy, do	66	2 00	132 00
			<hr/> \$9,148 04

Incidental expenses.

Office rent,.....	\$80 87
Stationery,.....	93 15
Fuel,	63 50
Light,.....	23 33
Labor.....	17 50
Postage and telegraph,.....	52 70
Miscellaneous,.....	45 32
Total,.....	<u>\$9,524 41</u>

TABLE NO. 1.—(CONTINUED.)

WESTERN RESIDENCY.—ERIE CANAL.

OGDEN EDWARDS, *Resident Engineer.*

Name and rank	No. of days employed.	Rate of compensation.	Amount.
Ogden Edwards, resident engineer,			\$93 40
do do travel			29 76
H. Thompson, 1st assistant do...	35	4 00	140 00
Wm. Crooks do do...	30	4 00	120 00
E. B. Latimer, 2d assistant do...	30	2 75	82 50
Chas. Truesdall, do do...	35	2 75	96 25
George C. Watriss, leveler,.....	29	2 00	58 00
B. P. Ransom, do.....	35	2 00	70 00
H. H. Pittar, draughtsman,.....	15	2 50	37 50
John Wiley, rodman,.....	30	1 50	45 00
C. C. Mallory, do.....	35	1 50	52 50
H. C. Loomis, tapeman,.....	35	1 25	43 75
J. S. Nye, do.....	35	1 25	43 75
W. A. Baker, axeman,.....	35	1 25	43 75
Chas. Trufaut, do.....	35	1 25	43 75
J. C. Burnham, assistant and clerk,	16	2 75	44 00
do travel,			4 31
J. M. Cook, inspector,	35	2 00	70 00
A. C. Palmer, do	35	2 00	70 00
A. Kelley, do	35	2 25	78 75
J. D. Schoonmaker, do	9	2 00	18 00

Incidental expenses.

Stationery,.....	\$3 88
Fuel,.....	19 13
Light,.....	10 38
Office rent,.....	19 71
Postage and telegraph,.....	7 24
Miscellaneous,.....	5 60
Total Erie canal by Ogden Edwards,.....	<u>\$1,350 91</u>

TABLE No. 1.—(CONTINUED).

WESTERN RESIDENCY—ERIE CANAL.

W. L. KIDDER, *Resident Engineer.*

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
W. L. Kidder, resident engineer,..		\$1,700	\$691 77
do travel,			367 62
H. Thompson, 1st assist. engineer,	279	4 00	1,116 00
Wm. Crooks, do do	272	4 00	1,088 00
do travel,			14 81
T. J. Mc Master, jr., 2nd ass't eng'r,	122	2 75	335 50
E. B. Latimer, do do	43	2 75	118 25
C. Truesdell, do do	279	2 75	767 25
G. C. Watriss, do do	105	2 75	288 75
do leveller,	157	2 00	314 00
B. P. Ransom, do	279	2 00	558 75
D. H. Andrus, ass't do	96	1 75	168 00
J. M. Jones, do do	79	1 75	138 25
H. H. Pittar, draughtsman,	23	2 75	63 25
do do	153	3 00	459 00
do do travel, ..			8 00
John Wiley, rodman,	3	1 50	4 50
C. C. Mallory, do	121	1 50	181 50
R. C. Whitney, do	252	1 50	378 00
O. D. Radford, do	236	1 50	354 00
H. C. Loomis, tapeman,	43	1 25	53 75
J. S. Nye, do	174	1 25	217 50
J. M. Jones, do	157	1 25	196 25

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
J. S. Brown, tapeman,	28	\$1 25	\$35 00
W. A. Brown, do	279	1 25	348 75
C. Trufaut, do	43	1 25	53 75
L. H. Clark, do	236	1 25	295 00
J. C. Burnham, assistant and clerk,	23	2 75	63 25
do do	143	3 00	429 00
do travel,			12 52
J. M. Cook, inspector,	96	2 00	192 00
A. C. Palmer, do	43	2 00	86 00
Augt. Kelley, do	59	2 25	132 75
W. A. Hine, do	78	2 00	156 00
do do	137	1 50	205 50
Albert Staley, do	37	2 50	92 50
do do	158	2 00	316 00
D. C. Simons, do	122	2 00	244 00
O. L. Combs, do	31	2 00	62 00
do do	137	1 50	205 50
			<hr/>
			\$10,811 47

Incidental expenses.

Labor,	43 00
Stationery,.....	178 59
Fuel,	72 13
Light,	50 47
Office rent,.....	188 62
Postage and telegraph,.....	61 59
Miscellaneous,.....	78 66
<hr/>	
Total Erie canal by W. L. Kidder,.....	\$11,484 53
Total western residency, E. C.....	12,835 44
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TABLE NO 1.—(CONTINUED.)
 CAYUGA AND SENECA CANAL.
 OGDEN EDWARDS, *Resident Engineer.*

Name and rank.	No. days employed.	Rate of com- pensation.	Amount.
Ogden Edwards, resident engineer,			\$98 08
do travel,.....			34 74
W. B. Cooper, first ass't engineer,	35	\$4 00	140 00
J. A. Lighthall, second do	35	2 75	96 25
F. W. Coleman, do	29	2 75	79 75
T. J. McMaster, jr., do	35	2 75	96 25
W. H. Bostwick, leveler,.....	30	2 00	60 00
H. H. Pittar, draughtsman,.....	20	2 50	50 00
G. Van Valkenburgh, rodman,....	35	1 50	52 50
Seneca Tyler, do	35	1 50	52 50
F. Putnam, axeman,.....	35	1 25	43 75
W. J. McGraw, do	35	1 25	43 75
H. V. Kipp, do	35	1 25	43 75
J. C. Burnham, assistant and clerk,.	19	2 75	52 25
Ezra Mallet, inspector,.....	35	2 00	70 00

\$1,013 57

Incidental expenses.

Stationery,	16 58
Fuel,.....	14 00
Light,	4 00
Office rent,.....	8 45
Postage and telegraph,.....	2 30
Miscellaneous,.....	2 25

Total Cay. & Sen. canal by Ogden Edwards,.... \$1,061 15

CAYUGA AND SENECA CANAL.—(CONTINUED.)

W. L. KIDDER, *Resident Engineer.*

Name and rank.	No days employed.	Rate of com- pensation.	Amount.
W. L. Kidder, resident engineer,..		\$1,700 00	\$687 09
do travel,...			330 36
W. B. Cooper, first ass't engineer,.	118	4 00	472 00
Alex. McElroy, do	158	4 00	632 00
J. A. Lighthall, second do	279	2 75	767 25
F. W. Coleman, do	198	2 75	544 50
T. J. McMaster, jr., do	43	2 75	118 25
W. H. Bostwick, leveler,.....	60	2 00	120 00
G. Van Valkenburgh, do	264	2 00	528 00
Aug't Kelly, do	213	2 00	426 00
H. H. Pittar, draughtsman,.....	20	2 75	55 00
do	23	3 00	69 00
Seneca Tyler, rodman,.....	255	1 50	382 50
D. H. Andrus, do	118	1 50	177 00
F. Putnam, axeman,.....	43	1 25	53 75
H. V. Kipp, do	121	1 25	151 55
W. J. McGraw, do	48	1 25	60 00
J. N. Wilcoxon, do	135	1 25	168 75
G. B. Seeley. do	15	1 25	18 75
R. J. Wands, do	61	1 25	76 25
J. C. Burnham, ass't and clerk,....	20	2 75	55 00
do	68	3 00	204 00
do travel,.....			2 75
Ezra Mallet, inspector,	43	2 00	86 00
B. F. Sisson do	92	2 00	184 00
R. Schuyler do	167	2 00	334 00
J. S. Brown, do	86	1 50	129 00
J. N. Wilcoxon, do	25	1 50	37 50
			<hr/>
			\$6,869 95

Incidental expenses.

Fuel,.....	32 90
Light,	23 25
Office rent,.....	89 05

Postage and telegraph,.....	14 63
Miscellaneous,	28 28
Total C. and S. canal by W. L. Kidder,	<u>\$7,077 56</u>
Total Cayuga and Seneca canal,	<u><u>\$8,138 71</u></u>

TABLE No. 1.—(CONTINUED.)
CROOKED LAKE CANAL.

OGDEN EDWARDS, *Resident Engineer.*

Name and rank.	No days employed.	Rate of compensation.	Amount.
Wm. Crooks, first ass't engineer,...	3	4 00	12 00
E. B. Latimer, second, do ..	3	2 75	8 25
do travel			6 79
W. H. Bostwick, leveller,.....	3	2 00	6 00
do travel,.....			3 86
John Wiley, rodman,.....	3	1 50	4 50
do travel,.....			7 04
Total, C. L. canal, by Ogden Edwards,.....			<u>\$48 44</u>

CROOKED LAKE CANAL—(CONTINUED.)

W. L. KIDDER, *Resident Engineer.*

W. L. Kidder, resident engineer,...			46 20
do travel,.....			5 52
William Crooks, 1st ass't engineer,	3	4 00	12 00
T. J. McMaster, Jr., 2d do	46	3 25	149 50
G. C. Watriss, leveller,	4	2 00	8 00
J. S. Nye, ass't do	46	1 75	80 50
H. H. Pittar, draughtsman,.....	8	3 00	24 00
T. J. Harrison, axeman,.....	2	1 25	2 50
J. C. Burnham, assistant and clerk, .	9	3 00	27 00
do travel,			9 39
			<u>364 61</u>

Incidental expenses.

Stationery,.....	8 82
Postage,	57
Total C. L. Canal, by W. L. Kidder,.....	<u>374 00</u>
Total engineering, C. L. canal,	<u><u>\$422 44</u></u>

TABLE No. 1.—(CONTINUED.)
CHEMUNG CANAL AND FEEDER.

OGDEN EDWARDS, *Resident Engineer*

Name and rank.	No. days employed.	Rate of compensation.	Amount.
Wm. Crooks, first ass't engineer,..	2	4 00	\$8 00
E. B. Latimer, sec'nd do ..	2	2 75	5 50
do travel,.....			5 01
W. H. Bostwick, leveller,.....	2	2 00	4 00
do travel,.....			7 79
John Wiley, rodman,.....	2	1 50	3 00
do travel,.....			6 54
Total C. C. and feeder, by Ogden Edwards,.....			<u>\$39 84</u>

TABLE No. 1.—(CONTINUED).
CHEMUNG CANAL AND FEEDER.

WINSLOW L. KIDDER, *Resident Engineer*.

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
W. L. Kidder, resident engineer,..		\$1,700	\$88 13
do travel,			40 99
Wm. Crooks, first ass't engineer,..	4	4 00	16 00
W. B. Cooper, do do ..	3	4 00	12 00
T. J. Mc Master, jr., 2nd ass't eng'r,	5	2 75	13 75
do do	59	3 25	191 75
do travel,.....			12 15
G. C. Watriss, leveller,.....	10	2 00	20 00
do travel,.....			10 57
Augt. Kelly, leveller,.....	3	2 00	6 00
do travel,			2 50
John S. Nye, ass't leveller,.....	59	1 75	103 25
H. H. Pittar, draughtsman,.....	52	3 00	156 00
Seneca Tyler, rodman,.....	21	1 50	31 50
do travel,			3 70
F. Quick, axeman,	$\frac{3}{4}$	1 00	00 75

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
R. J. Wands, axeman,.....	18	\$1 25	\$22 50
J. C. Burnham, ass't and clerk,...	16	3 00	48 00
do travel,.....			21 48
			<hr/> \$801 02
Incidental expenses			1 09
			<hr/>
Total Chemung canal and feeder by W. L. Kidder,.			\$802 11
Total eng'ring expenses Chemung canal and feeder,.			841 95
			<hr/> <hr/>

TABLE No. I.—(CONTINUED).
ENLARGEMENT OF THE OSWEGO CANAL.
M. S. KIMBALL, *Resident Engineer*.

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
M. S. Kimball, resident engineer,.. 1 year			\$1,700 00
do travel,			407 82
J. French, first assistant engineer,	95	4 00	380 00
W. W. Jerome, do do	304	4 00	1,216 00
C. B. Hyde, do do	198	4 00	792 00
do leveller,.....	113	2 25	254 25
Bruce Kimball, second ass't eng'r,	311	2 50	777 50
W. E. Harvey, surv'r & draughts'n,	236	2 25	531 00
do leveller,.....	72	2 25	162 00
J. V. Boomer, do 	158	2 25	355 50
do do 	78	2 00	156 00
do rodman,.....	75	1 75	131 25
C. A. Beach, leveller,	236	2 25	531 00
do ass't leveller,.....	78	2 00	156 00
J. H. Wood, do 	311	2 00	622 00
J. E. Forman, rodman,.....	314	1 75	549 50
J. T. Hagadorn, do 	279	1 50	418 50
Wayne Ramsey, do 	93	1 50	139 50
A. J. Nearing, do 	216	1 50	324 00
B. F. Sweet, tapeman,.....	273	1 50	409 50
A. C. Scott, draughtsman,.....	314	3 00	942 00

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
C. H. Lusk, clerk,.....	308	\$2 00	\$616 00
Joseph Tyler, inspector,.....	314	1 75	549 50
M. E. Luddington, do	310	1 75	542 50
J. E. Dunham, do	285	1 75	498 75
Sterling Newell, do	203	1 75	355 25
S. D. Newton, do	29	1 75	50 75
Zachariah Allport, inspector,.....	7	2 00	14 00
Findlay Hayes, do	84	2 11½	177 69
Patrick Murphy, axeman,.....	273	1 25	341 25
			<hr/>
			\$14,101 01

Incidental expenses.

Office rent,.....	191 25
Stationery,	247 95
Postage and telegraph,.....	82 14
Fuel,.....	130 47
Light,.....	54 91
Labor,	469 25
Affidavits,.....	46 41
Printing,	1 50
Express,.....	12 52
Miscellaneous,.....	78 39
Total,	<hr/> \$15,415 80

SUMMARY OF ENGINEERING.

By whom expended.	Rank.	Enlargement of the Erie Canal.	Enlargement of the Oswego Canal.	Enlargement of the Cayuga and Se- neca Canal.	Crook'd Lake Can'l.	Chemung Canal and Feeder.
Van R. Richmond,....	Division engineer,..	\$368 15	.....	.....	.....	.....
O. C. Hartwell,.....	do ..	1,446 67	\$558 84	\$490 20	.....	.....
M. C. Fremyre,.....	Resident engineer,..	6,883 26	.....	.....	.....	.....
Daniel Richmond,....	do ..	9,524 41	.....	.....	.....	.....
Ogden Edwards,.....	do ..	1,350 91	.....	1,061 15	\$48 44	\$39 84
W. L. Kidder,.....	do ..	11,484 53	.....	7,077 56	374 00	802 11
M. S. Kimball,.....	do ..	.....	15,415 80	.....	.....	.....
Total,.....	.....	\$31,057 93	\$15,974 64	\$8,628 91	\$422 44	\$841 95

TABLE No. 2.

Work under contracts existing prior to the passage of act, chap. 329, Laws of 1854.

STATEMENT showing the length in miles, number of structures, character of work, estimated cost at contract prices, amount of work done in 1856, whole amount done, and amount remaining to be done, on the Middle Division of the Enlargement of the New-York State canals.

Eastern Residency, Erie Canal.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Am't of work done in 1856.	Whole amount done.	Amount remaining to be done.
1.01	.....	Section No. 155,.....	\$23,537 57	.....	\$23,537 57	settled.
1.20	.....	do 156,.....	21,859 07	.....	21,859 07	do
0.90	.....	do 160,.....	31,478 70	\$680 00	30,350 00	\$1,128 70
0.85	.....	do 161,.....	12,637 80	180 00	11,620 55	1,017 25
	1	North lock, No. 50,.....	19,247 01	.....	19,078 90	168 11
	1	Butternut creek aqueduct,.....	20,311 21	.....	20,311 21	settled.
	1	Bridge on sec. No. 154,.....	1,809 91	.....	1,809 91	do
	1	do do 173,.....	1,443 03	.....	1,443 03	do
3.96	4	Total,.....	\$132,324 30	\$860 00	\$130,010 24	\$2,314 06

NOTE.—There has been done on the above contracts, during the years 1854-5-6, work to the amount of \$16,756.79.

TABLE NO. 2.—(CONTINUED.)
Western Residency, Erie Canal.

Length in miles.	No. of structures	Character of Work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
0.86	.....	Section No. 200,	\$33,787 68	\$4,300 00	\$33,322 66	465 02
0.83	.....	do 201,	33,913 31	4,990 00	32,743 08	1,170 23
	1	Lock No. 51,	33,456 50	.....	31,675 00	1,781 50
	1	do 52,	46,245 00	.....	46,245 00	Completed, but not settled.
	2	Bridge abutments on sections 198 and 200, ..	2,229 70	1,009 70	2,229 70	Settled.
1.69	4	Totals,	\$149,632 19	\$10,299 70	\$146,215 44	\$3,416 75

NOTE.—There has been done on the above contracts during 1854, 1855, and 1856, work to the amount of \$46,835.44. During the same period there has been done on completed, surrendered, and abandoned contracts, work amounting to \$31,533.55; making total amount done on contracts let prior to act, chap. 329, Laws of 1854, \$78,368.99.

CAYUGA AND SENECA CANAL.

NOTE.—All of the contracts now existing on this canal are in accordance with act, chap. 329, Laws of 1854, except Lock No. 12, which has been completed, but not settled. Work has been done during the years 1854, 1855, and 1856, to the amount of \$36,320.42, on contracts completed, which existed previous to the passage of said act.

Oswego canal.

TABLE No. 2.—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
0.25	.....	Part of section No. 27,	\$23,914 35	\$1,881 83	\$23,811 83	\$102 52
0.38	.....	Section No. 38,	62,420 00	700 00	61,120 00	1,300 00
	1	Lift lock No. 1,	41,474 66	Completed in 1855.	41,474 66	Settled.
	1	do 2,	31,000 00	932 00	30,332 00	668 00
	1	do 3,	32,066 29	556 29	32,066 29	Settled.
	1	do 6,	23,125 96	280 00	20,470 00	2,655 96
	1	do 7,	45,636 81	4,290 00	45,500 00	136 81
	1	do 11,	37,044 50	.....	36,810 00	234 50
	1	do 12,	62,958 87	4,450 00	62,050 00	908 87
	1	do 13,	42,904 80	1,674 80	42,904 80	Settled.
	1	do 14,	41,596 50	400 00	37,310 00	4,286 50
	1	do 15,	30,935 00	.....	28,935 00	2,000 00
	1	do 16,	32,963 05	2,350 00	31,890 00	1,073 05
	1	do 17,	29,461 00	.....	27,710 00	1,751 00
	1	Guard lock No. 1,	17,731 27	581 27	17,731 27	Settled.
	1	do 3,	32,919 22	3,150 00	32,340 00	579 22
	1	do 5,	15,107 55	890 00	14,725 00	382 55
	1	do 6,	94,000 00	6,900 00	80,480 00	13,520 00
	1	Side lock at Salina,	17,807 85	2,157 85	17,807 85	Settled.
	1	Culvert at Salina,	6,618 87	Completed in 1855.	6,618 87	do
	3	Bridges at Salina,	7,708 43	do	7,708 43	do

	4	Iron superstructures,	8,600 00	Completed in 1855.	8,600 00	Settled
	13	Valve gates,	6,688 16	do	6,450 00	238 16
0.63	38	Totals,	\$744,683 14	\$31,194 04	\$714,846 00	\$29,837 14

NOTE.—The amount of work done during the years 1854, 1855 and 1856, on contracts let prior to act, chap. 329, Laws of 1854, is \$397,401.53.

SUMMARY OF TABLE NO. 2.

Eastern Residency, Erie Canal.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Am't done in 1856.	Whole am't done.	Amount remaining to be done.
3.96	.....	Sections,	\$89,513 14	\$860 00	\$87,367 19	\$2,145 95
	1	Lock,	19,247 01	.....	19,078 90	168 11
	1	Aqueduct,	20,311 21	.....	20,311 21	settled.
	2	Bridges,	3,252 94	.....	3,252 94	do
3.96	4	Totals,	\$132,324 30	\$860 00	\$130,010 24	\$2,314 06

Western Residency, Erie Canal.

1.69	.....	Sections,	\$67,700 99	\$9,290 90	\$66,065 74	\$1,635 25
	2	Locks,	79,701 50	.....	77,920 00	1,781 50
	2	Bridge abutments,	2,229 70	1,009 70	2,229 70	settled.
1.69	4	Totals,	\$149,632 19	\$10,299 70	\$146,215 44	\$3,416 75

SUMMARY OF TABLE No. 2.—(CONTINUED.)
Oswego Canal.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done	Amount remaining to be done.
0.63	.....	Sections,	\$86,334 35	\$2,581 83	\$84,931 83	\$1,402 52
	17	Locks,	628,733 33	28,612 21	600,536 87	28,196 46
	3	Bridges,	7,708 43	.....	7,708 43	Settled.
	4	Iron bridge superstructures,	8,600 00	.....	8,600 00	do
	1	Culvert,	6,618 87	.....	6,618 87	do
	13	Valve gates,	6,688 16	.....	6,450 00	238 16
0.63	38	Totals,	\$744,683 14	\$31,194 04	\$714,846 00	\$29,837 14

TABLE No. 3.

Work under existing contracts, let in pursuance of act, chap. 329, Laws of 1854.

STATEMENT showing the length in miles, number of structures, character of work, engineer's estimate, estimated cost at contract prices, amount of work done in 1856, whole amount done, and amount remaining to be done on the Middle Division of the New-York State canals.

Eastern Residency, Erie Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent. added for contingencies.	Estimated cost at contract prices.	Am't done in 1856.	Whole amount done.	Amount remaining to be done.
0.97	Section No. 135,.....	\$26,576 00	\$24,237 22	\$11,797 22	\$24,237 22	settled.
1.08	do 136,.....	30,905 60	28,283 86	11,963 86	28,283 86	do
.94	do 137,.....	24,991 60	23,708 40	8,520 00	22,440 00	\$1,268 40
.81	do 138,.....	20,088 20	17,579 00	8,160 00	14,800 00	2,779 00
.85	do 139,.....	23,046 10	20,935 00	7,380 00	18,420 00	2,515 00
.99	do 140,.....	19,594 30	18,175 00	6,900 00	12,400 00	5,775 00
.92	do 141,.....	25,665 20	21,521 00	6,220 00	15,860 00	5,661 00
1.01	do 142,.....	33,181 50	22,183 75	6,243 75	22,183 75	settled.
1.05	do 143,.....	30,190 60	26,469 90	9,760 00	23,020 00	3,449 90
.98	do 144,.....	23,531 20	23,582 60	6,480 00	14,580 00	9,002 60
1.02	do 145,.....	23,150 60	23,582 80	8,360 00	19,840 00	3,742 80
1.06	do 146,.....	29,286 40	26,334 70	8,260 00	19,640 00	6,694 70
1.02	do 147,.....	26,895 00	19,615 70	6,780 00	14,180 00	5,435 70
.95	do 148,.....	30,353 40	29,508 00	11,340 00	23,480 00	6,028 00
.66	do 149,.....	22,814 00	22,696 70	8,856 70	22,696 70	settled.
1.31	do 150,.....	76,102 40	74,753 80	27,480 00	63,640 00	11,113 80

1.37	.....	Section No.151,	47,708 10	52,161 00	11,180 00	33,880 00	18,281 00
1.31	.....	do 157,	6,000 00	7,822 71	Completed in 1855.	7,822 71	Settled.
.25	.....	Cowassalon creek feeder,	4,078 80	3,767 50	2,760 00	3,180 00	587 50
.34	.....	Chittenango do	2,472 80	Abandoned.	360 00	2,112 80	
1.00	.....	Limestone do	7,095 00	9,166 00	2,160 00	4,700 00	4,466 00
1.59	.....	Butternut do	9,730 00	26,195 00	13,020 00	13,540 00	12,655 00
1.04	.....	Raising upper level Oneida					
		Lake canal,	7,986 55	8,697 50	480 00	480 00	8,217 50
1		Chittenango creek aqueduct, .	21,713 67	13,523 34	63 34	13,523 34	Settled.
11		Culverts, sections 135 to 139,	22,626 01	22,934 91	7,434 91	22,934 91	do
8		do 141 to 149,	22,548 09	21,352 20	4,126 70	18,066 70	3,285 50
1		do 150,	7,326 44	6,360 02	520 02	6,360 02	Settled.
2		do 151,	3,272 98	2,701 40	1,880 00	2,280 00	421 40
2		Culvert L. and B. C. feeders, .	3,882 45	2,772 00	.....	.....	2,772 00
2		D. and G. G. Chit. and L. C.					
		feeders,	6,017 00	4,868 50	3,280 00	4,320 00	548 50
1		D. and. G. G., at Cowassalon,	2,674 87	1,953 82	1,773 82	1,953 82	Settled.
1		Waste wier do	3,612 77	3,171 35	651 35	3,171 35	do
2		do L.C. and B.feeders,	2,620 20	2,407 00	2,260 00	2,260 00	147 00
2		Bridges do	2,828 10	4,991 50	3,920 00	3,920 00	1,071 50
9		Bridge abutments, section 135					
		to 145,	17,896 47	20,296 87	7,416 87	20,296 87	Settled.
2		Bridge abutm'ts sec. 146,	3,892 94	2,923 01	2,463 01	2,923 01	do
1		do do 147,	1,499 63	1,168 50	460 00	680 00	488 50
2		do do 148,	3,445 79	2,592 07	1,572 07	2,592 07	Settled.
1		do do 150,	2,290 42	1,807 60	1,007 60	1,807 60	do
1		do do 151,	2,290 42	1,736 77	1,676 77	1,736 77	do

TABLE No. 3.—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Engineer's estim'te with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole am't done.	Amount remaining to be done.
	5	Iron bridge superstructures,	\$10,176 00	\$9,691 50	\$7,131 50	\$9,691 50	Settled.
	11	Wooden bridge superstruct's,	6,891 50	4,338 90	2,880 00	3,500 00	\$838 90
22.52	65	Totals,.....	\$698,949 70	\$662,568 40	\$234,619 49	\$545,682 20	\$119,359 00
Add percentage retained, as per terms of contract,							53,020 00
Amount required to complete and cancel contracts,							\$172,379 00

Western Residency, Erie Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done	Amount remaining to be done.
.96	Section No. 189,.....	\$11,009 90	\$13,127 74	\$10,120 00	\$11,760 00	\$1,367 74
1.06	do 190,.....	19,739 50	16,719 60	2,980 00	8,460 00	8,259 60
.99	do 191,.....	23,360 70	20,501 42	11,340 00	14,220 00	6,281 42
1.03	do 192,.....	35,674 10	19,087 88	3,660 00	9,320 00	9,767 88
1.10	do 193,.....	42,519 12	28,988 77	18,020 00	24,880 00	4,108 77
1.12	do 194,.....	43,385 10	38,627 38	6,400 00	12,920 00	25,707 38

.78	.....	do	195,.....	31,768 27	25,429 03	4,300 00	19,340 00	6,089 03
.71	.....	do	196,.....	13,009 00	10,305 00	5,580 00	9,300 00	1,005 00
.65	.....	do	197,.....	21,403 80	19,565 00	2,520 00	5,540 00	14,025 00
1.35	.....	do	198,.....	15,538 05	18,333 27	11,937 27	18,333 27	Settled.
1.23	.....	do	199,.....	19,881 40	22,414 90	5,420 00	17,380 00	5,034 90
.33	.....	East half of	203,.....	22,648 72	19,149 88	5,569 88	19,149 88	Settled.
.67	.....	West do	203,.....	93,918 00	72,287 78	4,420 00	4,420 00	67,867 78
1.38	.....	do	204,.....	99,874 50	63,617 13	26,420 00	29,360 00	34,257 13
.80	.....	do	205,.....	26,053 50	16,665 00	8,440 00	10,640 00	6,025 00
.80	.....	do	206,.....	24,002 00	17,285 00	360 00	360 00	16,925 00
1		Centreport aqueduct,.....		16,952 65	11,401 70	4,580 00	11,060 00	341 70
1		Port Byron do		24,206 60	20,637 50	1,260 00	9,740 00	10,897 50
.71	1	Seneca river do and sec. 202,		108,170 26	96,930 28	17,460 00	94,920 00	2,010 28
	8	Culverts on sec. 180 to 197,..		15,583 05	13,832 30	6,460 00	13,760 00	72 30
	1	do 200,.....		1,978 35	2,166 61	Completed in 1855.	2,166 61	Settled.
	1	do 201,.....		2,115 85	1,765 55	do	1,765 55	do
	2	do 204 to 206,..		4,152 50	3,406 50	.....	.....	3,406 50
	7	Bridge abutments, 189 to 193,		15,132 42	11,646 61	6,546 61	11,646 61	Settled.
	6	do 194 to 197,		13,573 45	10,384 50	2,220 00	2,220 00	8,164 50
	3	do 201,.....		4,391 06	3,957 06	Completed in 1855.	3,957 06	Settled.
	1	Bridge abutment on sec. 204,		2,224 75	1,826 00	.....	.....	1,826 00
	1	Iron bridge superstructure on sec. No. 201,.....		1,400 00	1,275 00	Completed in 1855.	1,275 00	Settled.
	8	Iron bridge superstructures on secs. 189 to 202,.....		14,050 30	12,640 12	2,636 00	5,756 50	6,883 62
	8	Wood bridge superstructures on secs. 189 to 204,.....		4,531 45	4,688 40	2,754 38	3,261 11	1,427 29

TABLE No. 3—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
	1	Set valve gates for timber lock on sec. 203,	\$515 00	\$483 84	Completed in 1855.	\$483 84	Settled.
	1	Waste wier on sec. 192,	4,012 80	3,349 00	.....	220 00	\$3,129 00
15.67	51	Totals,	\$776,776 15	\$622,495 75	\$171,440 14	\$377,615 43	244,880 32
Add percentage retained as per terms of contract,							47,825 63
Amount required to complete and cancel contracts,							\$292,705 95

Cayuga and Seneca Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
.1	Section No. 1,	\$28,570 05	\$21,259 59	\$4,200 00	\$12,600 00	\$8,659 59
.1	do 2,	22,704 55	21,584 20	3,860 00	11,820 00	9,764 20
.1	do 3,	20,878 55	17,767 46	2,280 00	7,520 00	10,247 46
.1	do 4,	24,376 55	19,297 80	6,660 00	10,500 00	8,797 80
.1	do 5,	20,790 55	27,342 49	14,900 00	23,860 00	3,482 49

TABLE No. 3.—(CONTINUED.)
Oswego Canal.

Length in miles.	No. of structures	Character of work.	Engineers' estimate with 10 per cent. added for contingencies.	Estimated cost at contract prices.	Am't done in 1856.	Whole amount done	Amount remaining to be done.
0.85	Section No. 1,.....	\$50,473 50	\$40,039 00	\$10,012 90	\$26,296 25	\$13,742 75
0.84	do 2,.....	47,778 50	36,299 10	3,500 03	25,653 43	10,645 67
0.88	do 3,.....	19,109 47	40,241 00	20,819 44	35,926 54	4,314 46
1.0	do 4,.....	36,919 05	28,457 50	9,950 48	14,392 38	14,065 12
1.0	do 5,.....	38,165 40	29,624 00	14,401 69	14,401 69	15,222 31
1.13	do 6,.....	26,966 10	25,815 00	5,837 38	9,176 18	16,638 82
1.35	do 7, and part of 8,...	33,117 15	30,388 08	5,779 79	21,640 09	8,747 99
6.78	Part of sec. 8, 9, 10, 11, 12, 13, and part of 14, 15, 16,....	47,630 00	26,610 00	2,535 00	2,535 00	24,075 00
1.20	Part of secs. 14 and 15,....	63,592 10	50,092 50	8,599 99	19,612 39	30,480 11
1.	do 16 and 17,....	31,904 40	33,838 00	12,562 34	24,040 00	9,798 00
0.60	do 17 and 18,....	38,817 90	39,680 20	12,658 26	39,200 00	480 20
0.90	do 18,.....	31,607 10	30,480 00	3,620 70	6,128 40	24,351 60
1.00	Section No. 19,.....	30,710 40	31,870 00	1,749 60	9,173 80	22,696 20
0.73	Part of sec. No. 20,.....	28,962 15	25,605 00	879 40	2,540 00	23,065 00
0.73	do 20 and 21,...	23,804 55	22,204 00	.....	.....	22,204 00
1.09	do 21 and 22,...	16,001 15	15,151 00	.....	.....	15,151 00
0.96	do 22 and 23,...	32,352 52	28,182 00	1,375 50	4,794 50	23,287 50
3.43	Secs. 24, 25, 26, and part of 27,	16,830 00	20,507 50	9,738 01	9,738 01	10,769 49
0.41	Part of section 27,.....	30,926 21	26,542 74	4,025 77	14,661 55	11,881 19

0.38	.....	Part of section 27, including connect'g lock,	47,155 90	41,893 00	6,416 95	7,859 45	34,033 55
1.30	.....	do 28 and 29, ..	30,957 15	28,672 00	9,890 49	15,333 95	13,338 05
1.72	.....	do 30 and 31, ..	20,402 25	25,758 70	12,535 03	16,125 03	9,633 67
1.14	.....	do 31 and 32, ..	59,133 80	54,166 00	12,268 80	26,082 00	28,084 00
0.94	.....	Section No. 33,	44,860 20	34,244 00	5,691 10	10,180 00	24,064 00
0.61	.....	Part of section 34,	4,427 50	4,650 00	.....	.....	4,650 00
0.90	.....	do 35,	33,344 30	25,871 00	.....	.....	25,871 00
1.00	.....	do 36 and 37, ...	3,767 50	4,400 00	.....	.....	4,400 00
0.20	.....	do 37,	9,434 19	8,500 00	.....	.....	8,500 00
0.94	.....	do 37 and 38, ...	28,228 20	25,094 00	3,529 25	10,139 25	14,954 75
1		Stone dam at Oswego,	24,512 40	49,192 45	21,159 95	48,527 34	665 11
		Lengthening guard lock No. 2,	1,827 80	3,397 23	.....	3,397 23	Settled in 1855.
1		Rebuilding guard lock No. 2,	23,284 80	22,366 50	10,239 00	11,500 00	10,866 50
1		Raising walls of lock No. 5, .	3,895 10	4,205 00	2,554 60	2,554 60	1,650 40
2		Valve gates,	1,104 80	800 00	.....	800 00	Settled in 1855.
1		Waterhouse creek aqueduct, .	7,875 20	5,880 45	1,625 70	1,625 70	4,254 75
1		Bridge at Oswego,	3,353 24	3,438 70	.....	3,050 80	387 90
1		do Phoenix,	2,305 42	2,642 04	.....	2,642 04	Settled in 1855.
3		Bridge abutments at Syracuse,	16,570 95	13,913 00	9,181 29	9,181 29	4,731 71
3		Iron superstructures for do, ..	16,000 00	14,256 00	12,686 00	12,686 00	1,570 00
3		Bridges at Salina,	13,273 70	7,702 44	4,421 72	4,927 72	2,774 72
3		Bridges on secs. 3, 5 and 7, ..	9,421 61	9,479 00	6,893 12	8,267 12	1,211 88
3		do 27, 32 & 33, ..	7,414 44	6,352 40	3,135 17	3,546 17	2,806 23
6		do 18, 21, 28, 29,	18,076 98	15,190 70	9,269 97	9,269 97	5,920 73

TABLE No. 3.—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done	Amount remaining to be done.
	2	Culverts on secs. 5 and 7, ...	\$9,522 70	\$10,490 00	\$6,729 05	\$7,451 55	\$3,038 45
	3	do 18, 19, & 21,	7,390 90	9,765 70	4,566 93	9,765 70	Settled.
35.01	34	Total,	\$1,093,208 68	\$1,013,846 93	\$270,890 40	\$504,823 12	\$509,023 81
Add percentage retained, as per terms of contract,							73,232 67
Amount required to complete the work and cancel contracts,							\$582,256 48

SUMMARY OF TABLE No. 3.
Eastern Residency, Erie canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
18 30	.....	Sections,	\$520,080 20	\$483,151 14	\$165,681 53	\$401,404 24	\$81,746 90
4.22	.....	Feeders & upper level O. L. C.,	31,363 75	47,826 00	18,420 00	22,260 00	28,038 80
	1	Aqueduct,	21,713 67	13,523 34	63 34	13,523 34	.....
	24	Culverts,	59,655 97	56,120 53	13,961 63	49,641 63	6,478 90
	3	Waste weirs,	6,232 97	5,578 35	2,911 35	5,431 35	147 00
	3	Dams and guard gates,	8,691 87	6,822 32	5,053 82	6,273 82	548 50
	2	Bridges,	2,828 10	4,991 50	3,920 00	3,920 00	1,071 50
	16	Bridges abutments,	31,315 67	30,524 82	14,596 32	30,036 32	488 50
	5	Iron bridges superstructures, ..	10,176 00	9,691 50	7,131 50	9,691 50	.....
	11	Wooden do ..	6,891 50	4,338 90	2,880 00	3,500 00	838 90
22.52	.....	Totals,	\$698,949 70	\$662,568 40	\$234,619 49	\$545,682 20	\$119,359 00

SUMMARY OF TABLE No. 3.

Western Residency, Erie canal.

Length in miles.	No. of structures	Character of work.	Engineer's estim'ts with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
15.67	.....	Sections,	\$543,785 66	\$422,104 78	\$127,523 15	\$215,383 15	\$206,721 63
	3	Aqueducts,	149,329 51	128,969 48	23,300 00	115,720 00	13,249 48
	12	Culverts,	23,829 75	21,170 96	6,460 00	17,692 16	3,478 80
	17	Bridge abutments,	35,321 68	27,814 17	8,766 61	17,823 67	9,990 50
	9	Iron bridge superstructures, ..	15,450 30	13,915 12	2,636 00	7,031 50	6,883 62
	8	Wood do do ..	4,531 45	4,688 40	2,754 38	3,261 11	1,427 29
	1	Set valve gates for wood lock on sec. No. 203,	515 00	483 84	.....	483 84	Completed & settl'd
	1	Waste wier on sec. 192,	4,012 80	3,349 00	.....	220 00	3,129 00
15.67	51	Totals,	\$776,776 15	\$622,495 75	\$171,440 14	\$377,615 43	\$244,880 32

SUMMARY OF TABLE No. 3.

Cayuga and Seneca Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent. added for contingencies.	Estimated cost at contract prices.	Am't done in 1856.	Whole amount done	Amount remaining to be done.
22.77	.....	Sections,.....	\$462,395 44	\$439,262 16	\$141,380 00	\$245,320 00	\$193,942 16
	2	Locks,.....	42,398 95	37,007 50	Completed in 1855.	37,007 50	Settled.
	4	Culverts,	10,503 13	12,531 31	6,560 00	10,080 00	2,451 31
	15	Bridge abutments,.....	32,460 23	28,241 03	9,200 00	15,040 00	13,201 03
	6	Iron bridge superstructures,.	11,451 00	11,083 00	4,506 15	6,177 68	4,905 32
	13	Wood do ..	6,700 65	9,078 47	4,704 42	5,904 42	3,174 05
	3	Towing-path bridges,.....	7,900 42	9,295 18	575 18	11,845 93	Settled.
	1	Pier,	9,603 00	19,318 84	14,240 00	14,240 00	5,078 84
	1	Dam and guard gate,.....	27,914 70	34,898 67	22,020 00	34,360 00	3,418 67
	1	Dam,	3,801,60	2,388 50	.....	.....	2,388 50
	3	Sets valve gates,.....	1,942 50	\$1,167 70	Completed in 1855.	1,167 70	Settled.
22.77	49	Totals,.....	\$617,071 62	\$604,272 36	\$203,185 75	\$381,143 23	\$228,559 88

SUMMARY OF TABLE NO. 3.—(CONTINUED.)
Oswego Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contingencies.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done	Amount remaining to be done.
35.01	.....	Sections,	\$927,378 64	\$834,775 32	\$178,427 90	\$365,629 89	\$469,145 43
	1	Dam,	24,512 40	49,192 45	21,159 95	48,527 34	665 11
		Lengthening guard lock No. 2,	1,827 80	3,397 23	.....	3,397 23	.....
	1	Rebuilding guard lock No. 2,	23,284 80	22,366 50	10,239 00	11,500 00	10,866 50
	1	Raising walls of lock No. 5, .	3,895 10	4,205 00	2,554 60	2,554 60	1,650 40
	2	Valve gates,	1,104 80	800 00	.....	800 00	.....
	1	Aqueduct,	7,875 20	5,880 42	1,625 70	1,625 70	4,254 75
	23	Bridges,	86,416 34	72,974 28	45,587 27	53,571 11	19,403 17
	5	Culverts,	16,913 60	20,255 70	11,295 98	17,217 25	3,038 45
35.01	34	Totals,	\$1,093,208 68	\$1,013,846 93	\$270,890 40	\$504,823 12	\$509,023 81

TABLE No. 4.

Work on which contracts have been completed and cancelled, let in pursuance of act, chap. 329, Laws of 1854. STATEMENT showing the length in miles, number of structures, character of work, engineers' estimates, cost at contract prices, and amount of work done in 1856.

Eastern Residency, Erie Canal.

Length in miles.	No. of structures	Character of work.	Engineers' estimate with 10 per cent. added for contingencies.	Cost at contract prices.	Am't done in 1856.
0.97	.....	Section No. 135,.....	\$26,576 00	\$24,237 22	\$11,797 22
1.08	.....	do 136,.....	30,905 60	28,283 86	11,963 86
1.01	.....	do 142,.....	33,181 50	22,183 75	6,243 75
0.66	.....	do 149,.....	22,814 00	22,696 70	8,856 70
1.31	.....	do 157,.....	6,000 00	7,822 71	Completed in 1855.
	1	Chittenango creek aqueduct,.....	21,713 67	13,523 34	63 34
	11	Culverts on secs. 135 to 139,.....	22,626 01	22,934 91	7,434 91
	1	Culvert on sec. 150,.....	7,326 44	6,360 02	520 02
	1	Dam and guard gate, Cowassalon feeder,.....	2,674 87	1,953 82	1,773 82
	1	Waste weir do.....	3,612 77	3,171 35	651 35
	9	Bridge abutments, secs. 135 to 145,....	17,896 47	20,296 87	7,416 87
	2	do do 146,.....	3,892 94	2,923 01	2,463 01
	2	do do 148,.....	3,445 79	2,592 07	1,572 07
	1	do do 150,.....	2,290 42	1,807 60	1,007 60
	1	do do 151,.....	2,290 42	1,736 77	1,676 77
	5	Iron bridge superstructures,.....	10,176 00	9,691 50	7,131 50
5.03	35		\$217,422 90	\$192,215 50	\$70,572 79

TABLE No. 4.—(CONTINUED.)
Western Residency, Erie Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate with 10 per cent added for contin- gencies.	Cost at contract prices.	Amount done in 1856.
1.35	.....	Section No. 198,.....	\$15,538 05	\$18,337 27	\$11,973 27
.33	.....	East half of section No. 203,	22,648 72	19,149 88	5,569 88
	1	Composite culvert on section 200,.....	1,978 35	2,166 61	Completed in 1855.
	1	Arch culvert on section 201,	2,115 85	1,765 55	do
	7	Bridge abutments on sections 189 to 193,	15,132 42	11,646 61	6,546 61
	3	do do 201,	4,391 06	3,957 06	Completed in 1855.
	1	Iron superstructure on section 201,...	1,400 00	1,275 00	do
	1	Set valve gates for wooden lock on section No. 203,	515 00	483 84	do
1.68	14	Totals,	\$63,719 45	\$58,781 82	\$24,089 76

Cayuga and Seneca Canal.

	1	Lock No. 10,.....	\$20,072 90	\$19,520 93	Completed in 1855.
	1	Lock No. 11,.....	22,326 05	17,486 57	do
	3	Towing-path bridges on sections No. 1 and 8,.....	7,900 42	9,295 18	575 18
	3	Sets valve gates for locks No. 9, 10, and 11,.....	1,942 50	1,167 70	Completed in 1855.
	8	Totals,	\$52,241 87	\$47,470 38	\$575 18

Oswego Canal.

3	Culverts on sections 18, 19, and 21,	7,390 90	9,765 70	4,566 93
1	Road bridge at Phoenix,	2,305 42	2,642 04	Completed in 1855.
	Lengthening guard lock No. 2,	1,827 80	3,397 23	do
2	Valve gates,	1,104 80	800 00	do
6	Totals,	\$12,628 92	\$16,604 97	\$4,566 93

NOTE.—All of the contracts specified in the above table are also included in table No. 4.

WESTERN DIVISION.

REPORT OF JOHN D. FAY, DIVISION ENGINEER, 1856.

HON. S. SEYMOUR; *State Engineer and Surveyor* :

SIR :—In compliance with your instructions, I present herewith a statement of the expenses of the engineer department for the year 1856, and statements of the progress and present condition of the work on the western division of the New-York State canals.

This division embraces 273 miles in length of canal exclusive of slips, basins and feeders, and is divided into five residencies.

The first residency embraces that portion of the Erie canal, between the east line of Wayne county, and the west end of section No. 244, at Macedon, a distance of 31.93 miles, and is in charge of Ensign Bennett, as resident engineer.

The second residency embraces that portion of the Erie canal, between section No. 244, at Macedon, and the west end of section 275 at Spencerport, a distance of 35.67 miles, and is in charge of Richard Vernam as resident engineer.

The third residency embraces that portion of the Erie canal, between sections 275 at Spencerport, and the west end of section No. 329, at Reynale's basin, a distance of 41.40 miles, and is in charge of H. V. B. Barker, as resident engineer.

The fourth residency embraces that portion of the Erie canal between section 329, at Reynale's basin, and Buffalo, a distance of 38.60 miles, and is in charge of R. H. Colburn as resident engineer.

Total length of the Erie canal embraced in the four residencies above named 147.60 miles.

The fifth residency embraces all of the Genesee Valley canal, including the Dansville branch, making a total length of 118 miles, and is in charge of Hugh M. Severance as resident engineer.

The resident engineers now in charge of the work, except the one on the second residency, who held over, were appointed and entered upon the duties of their respective residencies, at the following dates :

First residency on the 10th of February last.

Second do (held over.)

Third do on the 1st of April last.

Fourth do on the 5th of February last.

Fifth do on the 10th of do do

Four first assistant engineers have been appointed, two of them to fill vacancies and two in place of two others removed. One was appointed on the 10th of February last, two on the first and one on the 3d of April following.

Some changes have also been made in the subordinate engineers, below the rank of first assistants.

The engineering force upon this division of the Erie canal has been engaged in preparing the working plans, laying out and supervising the construction of work in progress, measuring up and making the monthly estimates, as also, the final estimates of such works as have been completed during the year. The engineers have also had the same care and charge of other work constructed under the head of "repairs" in pursuance of special laws authorizing the same, and have assisted the superintendents of the canals, in the repairs of breaches, and in the construction of works connected with the repairs of the canals as occasion has required.

The engineers employed on the Genesee Valley canal, have rendered like services on that canal, to those described on the Erie, and in addition a party was organized and detailed to

make a survey for extending that canal in accordance with your instructions under act, chap. 149, Laws of 1856, which has increased considerably the expenses of engineering upon that canal for the past year.

The number of persons employed in the engineer department on this division, on the 31st day of December, 1856, was as follows:

Rank.	Enlargement of Erie canal.				G. V. canal.	Total number.
	First.	Second.	Third.	Fourth.	Fifth.	
Resident engineers,	1	1	1	1	1	5
First assistant engineers, ..	1	1	2	2	1	7
Second do ..	4	3	6	4	1	18
Levelers, surv., draughts-						
men and clerks,	4	9	10	8	3	34
Rodmen,	4	2	6	4	..	16
Axemen,	4	2	4	1	..	11
Tapemen and chainmen, ..	3	..	3	1	..	7
Inspectors,	2	5	5	5	..	17
						<hr/> 115 <hr/>

The annexed tabular statement (No. 1) shows the name, rank, period of service and amount of compensation paid each person employed in the engineer department on each residency, for the year 1856.

The results of said statement are as follows:

ENLARGEMENT OF ERIE CANAL.

First residency,	\$18,642 21
Second do	20,470 99
Third do	27,718 02
Fourth do	21,282 58
Add salary of division engineer,	\$1,439 97
do travel do do	645 96
	<hr/> 2,335 93

GENESEE VALLEY CANAL.

Fifth residency,	10,768 28
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Add salary of division engineer,.....	\$313 39	
do travel do do	150 36	
	<hr/>	\$463 75

Total expenditure of this department for the year, \$101,681 76

The whole amount of work done in 1856 was :

For enlargement of Erie canal,.....	\$1,976,532 56
For repairs do	29,752 53
For the Genesee Valley canal,.....	94,261 87

Making a total of..... \$2,100,546 96

or, a cost for engineering of $4\frac{1}{2}$ per cent upon the amount of work done on the Erie canal, and a cost of 11.9-10 per cent. upon the amount of work done on the Genesee Valley canal, making 4.8-10 per cent. as the cost of engineering upon the aggregate amount of work done on this division during the year. The cost of engineering for the year 1855, as reported by my predecessor, was 4.4-10 per cent upon the amount of work done on the Erie canal, and 9 per cent upon the amount done on the Genesee Valley canal.

The amount of work in progress upon this division of the Erie canal will not admit of any material reduction in the engineering force now employed, until after the opening of navigation next spring; after that time, much of the work now in progress will be either completed or suspended for the season, and such reduction of the force can then be made as the circumstances of the case may demand.

The force upon the Genesee Valley canal is already reduced to six in number, and the services of four of those will soon be dispensed with, leaving but the resident and one first assistant.

All the work upon this division, which was deemed necessary to complete the enlargement of the Erie, and finish the Genesee Valley canal, was, with few exceptions, under contract upon the locations and plans previously adopted by the Canal Board when I took charge of the same as division engineer on the 18th day of February last.

The work reported as not then under contract consisted of the following :

The Irondequoit creek culvert on section 256.

Raising banks of Genesee river feeder, and extending and raising the dam, section No. 337, at Lockport (lower town).

Towing path along margin of Tonawanda creek.

Weigh lock, scales and house, at Black Rock.

The abutments and superstructures for a change bridge on section No. 370.

Of the above, there has been put under contract during the past year :

The Irondequoit creek culvert, on section 256, and the abutments and superstructure for the change bridge now located on section 2, instead of 370.

And in addition, the following, not included in the above list of work, "not under contract :"

A box culvert on section No. 208,

Waste weir, at Rochester, on section 264,

do do Brockport, do 284,

do gates, Eagle Harbor, do 313,

do do Johnson's cr'k do 327,

One single stop-gate on section No. 318.

Three wood bridge superstructures over slips 1, 2 and 3, of Erie basin, Buffalo.

Bridge over Erie canal, at Vernon-street, Middleport, per act, chapter 29, Laws of 1856.

The superstructure of a road bridge on section 12, Mountain Ridge, is not included in the above list; but should be put under contract, and completed as soon as practicable.

The raising of the banks of the Genesee feeder, and the raising and extending of the Genesee river dam, at the head of said feeder, which is now in a very dilapidated condition, will be necessary before the surface of the water on the long level, extending from Rochester to Lockport, can be elevated.

Section 337, in the village of Lower Lockport, was enlarged and completed previous to the suspension in 1842, upon the plan then contemplated.

It has a mean width of 68.1-2 feet, with vertical battered walls on each side. I would not advise putting it under contract for enlargement to the dimensions adopted by the Canal Board, July 7, 1854, until the necessity for it is made apparent; as it may not require anything to be done more than to sink the bottom within its present limits to correspond with the proposed bottom line now established for the enlarged canal at that place.

The raising and protecting the towing-path along the margin of that portion of Tonawanda creek used for the canal, a distance of 11.58-100 miles, should be done another season.

The construction of a weigh-lock at Black Rock, although of some convenience to the forwarding interests of Buffalo, in determining the weight of light boats—the fall not being sufficient to weigh loaded ones, without raising them by machinery attached to the cradle—is not deemed of so pressing importance as the completion of the channel of the canal; and I would not recommend putting the same under contract until additional means are provided for that purpose.

Work Abandoned.

The only work which has been abandoned during the past year upon this division consists of section No. 11, on the mountain ridge west of Lockport, and sections 1 and 2 in the city of Buffalo.

These sections were let in 1850 and have been prosecuted under the contracts then made up to May last, when they were abandoned by the contractors. They have since been relet by the contracting board at a large increase of cost over the amount of the old contracts. This increase may be attributed to the following causes. The unfavorable location of the work; the amount remaining to be done being mostly below surface of water in the canal, requires a heavy expenditure for draining; the excavation on section 11 being a hard and difficult material

to remove and the amount of excavation on sections 1 and 2 being much larger than heretofore estimated, occasioned by deposits of sand washed in from Lake Erie during high water and severe gales on the lake.

The following shows the comparative cost under the two contracts :

Section 11.

Old contract \$15,338 86	New contract \$18,860	Increase \$3,521 14
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Sec's. 1 & 2.

Old contract \$15,446 13	New contract \$40,450	Increase \$25,004 87
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Total old con't. \$30,783 99	Total new contract \$59,310	Total inc. \$28,536 01
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making the total increase of new over old contracts \$28,536.01.

The estimates of the work under contract upon this division have been revised, and such changes made in the quantity and classification of material, as the development of its character, in its approach toward completion, has rendered necessary to determine its cost, at the prices contained in the present contract, and the results of the same, including that not under contract, at the estimate of the engineers, are contained in statements No's. 2, 3, 4 and 5 annexed, the footings of which are shown in the following abstract.

ABSTRACT,

Showing the estimated cost of all the work necessary to complete the Western Division of the enlargement of the Erie canal, Erie canal repairs, and the Genesee Valley canal; amount of work done in 1856, whole amount of work done, and remaining to be done, from the annexed statements.

REFERENCE TO RESIDENCIES, STATEMENTS, &c.	Estimated Cost.	Amount done in 1856.	Whole Amount done.	Am't rem'g to be done
<i>1st Residency.</i>				
No. 2. Work under existing contracts let prior to passage of act, chap. 329, Laws of 1854,	\$92,798 07	\$6,231 30	\$90,670 07	\$2,128 00
No. 3. Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,	886,215 12	327,830 01	567,651 30	318,563 82
No. 4. Work not under contract, .....	.....	.....	.....	.....
<i>2d Residency.</i>				
No. 2. Work under existing contracts let prior to passage of act, chap. 329, Laws of 1854,	44,162 87	.....	42,041 00	2,121 87
No. 3. Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,	1,285,881 56	535,193 56	885,673 56	400,208 00
No. 4. Work not under contract,	3,000 00	.....	.....	3,000 00
<i>3d Residency.</i>				
No. 2. Work under existing contracts let prior to passage of act, chap. 329, Laws of 1854,	134,224 00	4,843 00	131,524 00	2,700 00
No. 3. Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,	1,820,861 95	694,188 64	1,420,655 64	400,206 31
No. 4. Work not under contract, .....	.....	.....	.....	.....
<i>4th Residency.</i>				
No. 2. Work under existing contracts let prior to passage of act, chap. 329, Laws of 1854,	\$1,226,316 01	\$113,263 00	\$1,056,171 01	\$170,145 00

ABSTRACT—(CONTINUED.)

REFERENCE TO RESIDENCIES, STATEMENTS, &C.	Estimated cost.	Amount done in 1856.	Whole amount done.	Am't rem'g to be done.
No. 3. Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,.....	1\$,052,711 39	\$294,983 05	\$666,270 49	\$386,440 90
No. 4. Work not under contract,.....	131,605 00	.....	.....	131,605 00
Total for the enlargement of the Erie canal,.	\$6,677,775 97	\$1,976,532 56	\$4,860,657 07	\$1,817,118 90

ERIE CANAL REPAIRS.

<i>3d Residency.</i>				
Work under contract,.....	\$5,577 00	.....	.....	\$5,577 00
<i>4th Residency.</i>				
Work under contract,.....	40,156 08	\$29,752 53	\$33,832 53	6,323 55
Total for repairs of the Erie canal,.....	\$45,733 08	\$29,752 53	\$33,832 53	\$11,900 55

GENESEE VALLEY CANAL.

<i>5th Residency.</i>				
No. 2. Work under existing contracts, let prior to passage of act, chap. 329, Laws of 1854,...	\$462,843 21	\$35,717 19	\$459,020 16	\$3,823 05
No. 3. Work under existing contracts let prior to passage of act, chap. 329, Laws of 1854,.....	212,134 54	58,544 68	165,411 24	46,723 30
Total for Genesee Valley canal,.....	\$674,977 75	\$94,261 87	\$624,431 40	\$50,546 35

SUMMARY.

Total for enlargement of the Erie canal,.....	\$6,677 97	\$1,976,532 56	\$4,860,657 07	\$1,817,118 90
do do Genesee Valley canal,	674,977 75	94,261 87	624,431 40	50,546 35
Total for enlarg'mt, of Erie and Gen. Val. canals,	\$7,352,753 72	2,070,804 43	5,485,088 47	1,867,665 25
do repairs of Erie canal,.....	45,733 08	29,752 53	33,832 53	11,900 55
Total whole Western division,	\$7,398,486 80	\$2,100,556 96	\$5,518,921 00	\$1,879,565 80

NOTE.—For full details of the estimates, and the state and progress of the work on each sub-division—reference is made to the accompanying tabular statements, from No. 2 to 6.

The following statement shows the estimated cost of all the work on the western division, the amount done and remaining to be done, the percentage retained on work done previous to Dec. 31st, 1856, and the estimated cost of engineering, land damages, removing buildings, &c., necessary to complete the work.

Western Division.

ENLARGEMENT OF THE ERIE CANAL.

Estimated cost of work under contract previous to Dec. 31st, 1853,	\$1,497,500 95	
Estimated cost of work put under contract since Dec. 31st, 1853,	5,045,670 02	
	<hr/>	\$6,543,170 97.
Amount of work done previous to Dec. 31st. 1853,	\$951,042 75	
do from Dec. 31st, 1853 to Dec. 31st, 1856,	3,909,614 32	
	<hr/>	4,860,657 07
Amount remaining to be done Dec. 31st, 1856, ..	\$1,682,513 90	
Add for contingencies 10 per cent.,	168,251 39	
	<hr/>	1,850,765 29
Total,		
Amount of percentage retained to Dec. 31st, 1856,	\$489,360 00	
Estimated cost of work not under contract Dec. 31st, 1856,	134,605 00	
Estimated cost of engineering, land damages, removing buildings, &c.,	324,000 00	
	<hr/>	947,965 00
Total amount required to complete western division of the enlargement of the Erie canal, ..	\$2,798,730 29	

GENESEE VALLEY CANAL.

Estimated cost of work under contract previous to Dec. 31st, 1853,.....	\$462,843 21	
Estimated cost of work put under contract since Dec. 31st, 1853,	212,134 54	
	<hr/>	\$674,977 75
Amount of work done previous to Dec. 31st, 1853,.....	\$282,404 00	
do from Dec. 31st, 1853, to Dec. 31st, 1856,.....	342,027 40	
	<hr/>	624,431 40
Amount remaining to be done Dec. 31st, 1856,.		50,546 35
Add for contingencies 10 per cent.,.....		5,054 63
		<hr/>
Total,		\$55,600 98
Amount of percentage retained to Dec. 31, 1856,.....	\$11,280 00	
Estimated cost of work not under contract Dec. 31, 1856,.....	None.	
Estimated cost of engineering, land damages, removing buildings, &c.,.....	30,000 00	
	<hr/>	41,280 00
Total amount required to complete the Genesee Valley canal,.....		<hr/> <hr/> \$96,880 98

REPAIRS OF ERIE CANAL.

Estimated cost of work under contract previous to Dec. 31, 1856,.....	\$45,733 08	
	<hr/>	\$45,733 08
Amount of work done to Dec. 31, 1856,.....		33,832 53
		<hr/>
Amount remaining to be done Dec. 31, 1856,..		\$11,900 55

SUMMARY.

Estimated amount required to complete enlargement of Erie canal,	\$2,798,730 29
do Genesee Valley canal,	96,880 98
Total required to complete enlargement of Erie and Genesee Valley canals,	\$2,895,611 27
Estimated amount required to complete repairs of Erie canal,	11,900 55
Total required for whole western division,...	<u>\$2,907,511 82</u>

The cost at contract prices of work under contract, and at estimated prices for work not under contract, for the enlargement of the Erie canal and for the completion of the Genesee Valley canal, as compared with a similar statement of cost shown in the last annual report, at pages 179, 180 and 181, is as follows, for each residency upon the western division :

	ENLARGEMENT OF ERIE CANAL.				Genesee Val'y canal residency.	Totals.
	RESIDENCIES.					
	1st.	2d.	3d.	4th.	5th.	
Cost as per present estimate,.	\$979,013 19	\$1,333,044 43	\$1,955,085 95	\$2,410,632 40	\$674,977,75	\$7,352,753 72
Cost as per estimate last year,	930,255 61	1,214,476 39	1,662,417 00	2,288,495 58	627,257 88	6,722,902 46
Increase,	\$48,757 58	\$118,568 04	\$292,668 95	\$122,136 82	\$47,719 87	\$629,851 26

This increase may be accounted for in part, upon each of the several residencies, as follows :

First Residency.

Work put under contract the past season, not embraced in former estimates,	\$2,040 00
The balance may be attributed to a slight increase in the cost of mechanical structures amounting to	3,155 00
And the use of timber for foundations under slope walls where required, to the use of brush, stone and gravel, placed on the outside slope of banks to prevent breaks when the same were brought into use last spring; to the construction of protection walls to sustain bridge embankments and to changes in the classification of materials in consequence of encountering more rock excavation than previously contemplated,	43,562 58
	<hr/>
	\$48,757 58
	<hr/>

Second Residency.

Work put under contract in 1856 not included in former estimates \$4,511.00. The excess upon mechanical structures is \$19,570.40, caused mostly by an increase in quantities which as originally estimated were in many instances wholly insufficient. The increase upon section work is \$98,486.64; about \$15,000 of this sum were expended in strengthening high embankments by graveling and protecting the outside slopes with brush and stone, to guard against breaks at the time of bringing new portions of the line into use last spring. A small part of the balance may be attributed to slight changes in the plan of construction, such as the building of vertical walls and the use of timber under slope walls where the bottom was not considered sufficiently firm to afford a safe foundation, but the greater portion of it is chargeable to a somewhat general increase in the quantities of excavation and embankment and a more correct classification of the materials found in the excavations.

Third Residency.

Work put under contract in 1856 not embraced in former estimates,	\$11,874 00
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Contract work not embraced in former estimates as follows :

Work done in constructing roads,.....	\$8,587 00
Brush, stone and gravel used in protecting banks brought into use last spring,.....	12,561 00
Foundation for stop-gate on section No. 289,.....	1,450 00
Change of plan in the construction of double arch culverts on sections No's. 306 and 326 authorized by the Canal Board,.....	5,347 00
Constructing covered drain in the village of Middleport,	2,800 00
Constructing covered drain in the village of Albion,	3,300 00
Excavation of side ditches, and discharge drains for culverts,.....	12,262 00
Change of plan in the construction of parts of sections 313, 318 and 327 by substituting timber and plank facing for wall by resolution of Canal Board,.....	2,000 00
Bridge embankments,.....	9,700 00
Work done last spring in getting the canal in readiness for navigation, not necessary for the enlargement,	10,300 00
Timber and plank foundation, also coping timber for slope and vertical walls,.....	18,900 00
Puddling earth,.....	22,600 00
Puddling earth in and about mechanical structures,	7,500 00
Excavation of solid and quarried rock in foundation pits for mechanical structures,.....	19,550 00
Difference in cost of mechanical structures by change in plans, not shown in the annual report of 1855,	25,500 00
The remaining difference may be accounted for by the excess of rock excavations, and the increased quantities of vertical and retaining walls,.....	118,437 95
	<hr/>
	\$292,668 95
	<hr/>

Fourth Residency.

Work put under contract this year not embraced in former estimates,.....	\$5,562 00
Section 11 on the mountain ridge west of Lockport, and sections 1 and 2 in the city of Buffalo, have been abandoned and relet at an increased cost over the amount of the old contracts of.....	28,526 00
Change of plan in the manner of constructing sec. 369 through the village of Black Rock, authorized by the Canal Board,....	10,000 00
The balance, \$78,048.82, may be attributed to an increase in quantities, originally estimated too small; by the use of timber for foundations, for vertical and slope walls, and by changes in the classification of materials found in the excavations in consequence of more rock occurring than previously anticipated,.....	78,048 82
	<hr/> <hr/> \$122,136 82 <hr/> <hr/>

GENESSEE VALLEY. CANAL.

Fifth Residency.

Most of the increase upon this residency is occasioned by the amount of work done at Rockville reservoir and on the canal, both above and below Rockville, in repairing the damages occasioned by the flood of August 1855, and the floods of last spring, and by raising and strengthening the banks of Ischua feeder, and widening and deepening the channel for about one mile in length, of the lower end of the same, in order to give it sufficient capacity for the passage of water to supply the summit level of the canal.

Condition of the Work.

ENLARGEMENT OF ERIE CANAL.

That portion of the Erie canal embraced in this division extends from the east line of Wayne county to Buffalo a distance of 155 miles; the length of canal, as located for the enlargement between the same limits, is 147.60 miles, saving in distance 7.40 miles.

SECTION WORK.

Of the above section work there is—

	Miles.
Enlarged and completed,.....	11.37
Under existing contracts nearly completed,.....	39.77
do do well advanced,.....	79.56
do do but little done,.....	16.00
Not under contract, sec. 337 through lower Lockport,	00.90
	<hr/>
	147.60
	<hr/>

LOCKS.

There are on the division 1 pair of double locks at Macedon, 5 pair of double combined locks at Lockport, 11 single lift locks, 1 weigh lock at Rochester, 2 guard locks, the river lock at Tonawanda, and the ship lock at Black Rock, enlarged and completed. Locks 65 and 66, east of Rochester, and the guard lock at Black Rock, are nearly completed and will be ready for use next spring. The weigh lock at Black Rock, which is the only lock remaining to be built, is not under contract.

AQUEDUCTS.

Of aqueducts, there are four, three of which are completed and in use, viz: the one over Mud creek, at Lyons, 130 feet in length; one over the Genesee river, at Rochester, 780 feet in length, and one over Oak Orchard creek, at Medina, 80 feet in length. The other, which is over Mud creek, at Palmyra, is nearly completed, and will be brought into use next spring. It consists of three spans, and is 100 feet in length.

CULVERTS.

There are 109 culverts of all kinds, 89 of which are completed and in use; 17 far advanced, and will be finished for use next spring, and three that will not be fully completed before next fall.

WASTE WEIRS.

Of waste weirs there are 14; four of which are completed, most of the others are far advanced, and all will be completed by the opening of navigation next spring.

BRIDGES.

There are, as located, 139 farm and road bridges; 9 farm bridges have been commuted for; 67 farm and road bridges, including their superstructures, have been built; 51 farm and road bridge abutments, and their superstructures, have been commenced, and will be finished by next spring. The remaining 12 farm and road bridges will not be finished until next season.

STOP-GATES.

But little has been said relative to stop-gates, in connection with the enlarged Erie canal.

During the past season I prepared a plan for one, and submitted it for your consideration. Subsequently, the Canal Board adopted the plan, and directed the construction of "one single stop-gate" on this division, not to exceed in cost \$9,000. It has been put under contract, at an amount less than the above limit, and is, by the terms thereof, to be completed by the 1st of April next.

For the purpose of obtaining a supply of water, mainly from Lake Erie, for that part of the canal extending from the city of Buffalo to Clyde, Wayne county, it is to have a channel much broader and deeper between Rochester and Buffalo than that adopted upon other portions of the line. The level between Rochester and Lockport is over 60 miles in length.

A break, at places, on many portions of it, would create a volume of water, that in its course to Lake Ontario, would cause serious damage to farms and property in its route. The old canal was narrow and shallow, and but little difficulty was experienced in throwing dams across it; but such will not be the case with the wider and deeper channel of the enlarged canal; and the construction of dams, in case of breaks, will be practically inoperative, until the water has spent its force and done its damage.

The importance of guard, or stop-gates, at suitable places along the canal, on the long levels, and at opposite ends of heavy and expensive embankments, as that across the valley of Iron-

dequoit creek, may be overrated, yet it would seem they were almost a matter of necessity to a successful and economical management and maintenance of navigation on the enlarged canal.

The cost of constructing them, at such places as are deemed necessary on this division, would probably be from \$80,000 to \$100,000. This amount is not included in the estimates now presented of the cost of completing this division of the canal, for the reason that it is a matter undetermined, and consequently open for future consideration.

ERIE BASIN AND SLIPS, BUFFALO.

This work was put under contract in the year 1849 at an estimated cost at contract prices, under the plan of construction then adopted, of about \$140,000.

The plan of construction was changed in 1851, by increasing the amount of masonry, cribbing, piling and loose stone in the main breakwater, and by cribbing the sides of the slips.

Subsequently in 1855, another change was approved and adopted by the Canal Board, "contemplating an extension of the main breakwater 200 feet, the construction of a pier across the entrance to the lower slip and an additional protection of piling, brush and stone on the outer side of the main breakwater."

The latter change involves an increased expenditure of about \$45,000, which, with the change of 1851, has added largely to the original contemplated cost of the work.

During the past season this work has been prosecuted principally upon the change of plan adopted in 1855, with the exception of the channel excavation, and is now so far advanced that it can be fully completed in the course of the coming season.

There was not as much of the line of enlarged canal brought into use last spring as was anticipated when the last annual report from this division was presented.

The pleasant weather in the latter part of the year 1855, induced the contractors to open a large amount of work in anticipation of a favorable winter for prosecuting the same, but the severe cold weather which soon followed, extending through the winter, prevented as much being accomplished as they had made preparations for doing, and on an examination of the line even after taking charge of the division, I found it much cut up and broken, and in bad condition, under the most favorable circumstances, for being got in readiness for an early opening. The cold weather continued so long, and the frosts had penetrated so deeply, that but little was, or could be done, towards getting the line in readiness for navigation until late in the season. And the contractors having been allowed to destroy the old canal at Brockville culvert, across the high embankment at Otter creek, and at Fish creek and Shelby basin culverts; places, where the enlargement work was in a very backward condition, with barely stone enough delivered for the culverts (which came from Lockport) to make them of sufficient length to admit of the construction of narrow banks with a contracted water way, and where it would have been decided economy and less hazardous to navigation to have preserved and used the old canal during the past season; it became a matter of imperative necessity to do a large amount of work, considerable of which was more for the purpose of obtaining a channel than accessory to the enlargement, to bring the new canal into use at these places; in addition to which, an unusual amount of work, had to be done at other places along the entire line, and all, in a comparatively limited period of time, in order to get the same in readiness for opening. While the banks were got up in form and dimensions, and the channel in shape for navigation by the time appointed for opening the canals, the result on letting in the water, but too plainly showed that the work had been too much hurried and that, aside from defects in the plan of some of the structures upon the third subdivision, which was the residency where most of the difficulties occurred, too much frost had been covered up in the banks and in the puddling around culverts, and the consequence was, that a series of breaks occurred on the long level between Rochester and Lockport, that

almost wholly interrupted navigation upon that level for the first three weeks after the time appointed for opening the canals upon this division; after that time however a good navigation was maintained throughout the division and continued with but little interruption for the balance of the season.

The following extract from a communication made to the Hon S. S. Whallon, Canal Commissioner of this division, on the 22d day of April last, shows somewhat the difficulties then apprehended in opening the canals for navigation :

“ Work is in progress throughout the whole length of this division, from the east line of Wayne county to Buffalo, a distance of 155 miles. A large portion of the embankments have been made up during the frosts of the late severe winter, and consequently more or less frozen material has been used in their construction.

“The filling around culverts and waste weirs, and the embankments built up to and over the same, which have recently been, and are now being made, are also, more or less loose and unstable and will require great care and caution when first used to enable them to hold water. I should deem it extremely hazardous to fill the canal so long as the banks remain in this condition, but if a little time was given to allow the frosts to dissolve and the new banks to settle, and the water was then to be let in gradually, occupying several days in filling the levels and watching its effects, I should have more confidence in a successful result; such I believe to be the only course which can be adopted with safety to the work, and with a fair probability of being able to maintain an uninterrupted navigation. If a few days delay in getting the canals in readiness and the levels sufficiently filled for the passage of boats without hindrance, should be deemed, as it unquestionably is, of more importance than an earlier opening, this is a time and occasion when such discretion should be used for the benefit of the interests involved.

“The forwarders prefer certainty to time; with them a few days delay is not material, but a probable degree of certainty is important; so long as their boats are unloaded and unmanned,
[Assembly, No. 60.] 10

expenses are light, but when manned and loaded, expenses increase, and delays from breaks or otherwise add to the burthen without corresponding benefits. There is, under the most favorable circumstances, much danger to be apprehended in filling the canals while a large amount of frost remains in the banks, even when the banks are old, but more particularly so when the banks are new and made during the frosts of winter, and it is claimed that a reasonable prudence should be exercised in this matter, in order to meet with a probable degree of success. From the representations made to me by the residents in the several communications herein referred to, and from my own observation and knowledge of the situation of the canal on this division, I would advise that the canals should not be declared ready for navigation before the 15th day of May next, that the filling should commence as early as the 7th or 8th, and that the intervening time between that and the 15th be occupied in testing the banks, and getting the levels filled with water ready for navigation at that time."

The past summer and fall were extremely favorable for prosecuting work, and a large amount was done during that time. Nearly all the work has been accomplished which can be done during the season of navigation, except the delivery of the balance of materials required for the berme walls, and except sec. 207, on the Montezuma marshes, sec. 256, across the valley of Irondequoit creek, secs. 257, 258, and 259 in the vicinity of Pittsford, and sec. 289, across the valley of Sandy Creek at Holley. These sections are most of them large in the amount of work yet remaining to be done, and being on independent lines, can and should be prosecuted during the next season of navigation, in order to have them finished by the time the other portions of the canal will be completed.

The annexed statement (No. 7), is an approximate estimate of what will be required on each work on this division from the 1st of May, 1857, to the 1st of December following, for the accomplishment of these purposes, and amounts to \$350,630.

It will be necessary to use the old canal at the following places another year; between the east line of Wayne county and

Pit lock, a distance of 1.15 miles; between Irondequoit creek culvert on section 256, and lock 65 west of Pittsford, a distance of 4.45, miles and between the intersecting points of the independent line at Holley, a distance of 75 chains. The latter is however under contract for improvement, to be made 35 feet wide on the bottom and so as to have the same depth of water as other portions of that level. The two former portions should be similarly improved by the superintendents in charge thereof or by being put under contract for that purpose. The cost of making a channel 5 feet deep and 35 feet wide on the bottom is estimated for the former at \$1,200 and for the latter at \$12,000 or a total for the two pieces of \$13,200.

It will be seen from the foregoing that the enlarged canal on this division, completed and uncompleted will all be brought into use on the opening of navigation next spring with the exception of the portions above named;

That 140.26 miles of it will have 7 feet water, and 8.10 miles of it will have 5 feet water. For a more full detail of the probable condition of the canal on this division on the opening of navigation next spring, reference is made to statement No. 6 annexed.

GENESEE VALLEY CANAL.

This canal extends from the city of Rochester to the Allegany river, with which it connects at the village of Olean, and is 107 miles in length; the branch extending from the junction at the Shakers to Dansville, is 11 miles making the total length 118 miles.

The Dansville branch, and that portion between Rochester and the Shakers, 52 miles, was completed and brought into use in 1840; 36 miles more, between the junction at the Shakers and Oramel, were completed and brought into use in 1851; 2 miles more between Oramel and Belfast in 1853, and 3 miles more extending thence to Rockville in 1854, making 93 miles, which has been in use since that time.

It was confidently anticipated, as appears by the last annual report, that 24 of the remaining 25 miles, would have been com-

pleted and brought into use in the fall of 1855, but for the serious damage occasioned to this part of the canal by the flood of August of that year, and which is described in said report as follows: "Near the close of the month of August the heavy rains created an extraordinary rise in the streams, which occasioned a breach in the Rockville reservoir about 5 miles above Oramel, in consequence of the incapacity of the outlet to carry off the surplus water.

"The water from the reservoir passed into the canal near the head of lock No. 89, and from thence followed the line of canal for the distance of one half mile, passing around locks 88 and 87, breaking over the banks at each lock, carrying away a large portion of the embankment, and doing great damage to the canal and the country adjoining the stream below. Other portions of the line both above and below this reservoir, were considerably damaged, and the project of opening the line to Olean was as a consequence abandoned. The damage sustained by this flood will, it is expected, be repaired in time to open the line to Olean in the spring."

Little, however, was done, towards repairing the damage occasioned by said flood, or towards finishing that portion of the canal south of Rockville, until last spring.

The plan adopted for the repairs at Rockville, provides for passing the water through the upper and around the two lower locks in time of severe floods, in channels constructed for that purpose, and discharging it into the creek below.

The work at Rockville and upon that part of the canal south thereof to Olean basin, was so far completed that it was ready for the water on the 4th of July last, but the severe drouth then existing, and which extended into the fall months, prevented obtaining a sufficient amount of water for navigation until about the 1st of November following; it was then filled and a good navigation obtained upon it for the balance of the season.

A small amount of business was done in the way of transporting lumber from New Hudson, Cuba and Hinsdale, and several boats with merchandise passed through to Olean during that time.

A feeder about five rods in length has been constructed on section 100, by which the water is taken from Olean creek above Smith's mill dam, directly into the canal at that place for the supply of that portion south thereof to Olean basin, a distance of five miles, thereby diminishing to that extent the amount required to be drawn southerly from the summit level for that purpose.

A small amount of work has been done on section 107, and upon one of the two lift rocks located thereon. This is the southernmost section of the Genesee Valley canal, and when completed will connect the Olean basin, its present termination, with the Allegany river at Olean. The finishing of three lock houses, one composite culvert on section 9, and Oil creek reservoir on the summit level, is all that yet remains to be done, in addition to section 107, and the structures located thereon, to complete this canal so far as at present contemplated.

Of the above work the completion of Oil creek reservoir is by far the most important. That portion of the canal south of Rockville, is in a great measure dependent upon it for its supply of water; without it there is but the natural flow of Oil, Chamberlain and Ischua creeks, which cannot be relied upon as furnishing enough water for more than two months navigation in the spring and two months in the fall of the year.

This reservoir is well advanced and can be completed early in the coming season if sufficient means are provided for that purpose.

It is an important work and should be carried forward to completion without unnecessary delay. It will flow about 470 acres, will have an average depth of 25 feet, and it is anticipated will hold in reserve enough water, with the natural flow of the streams before named, to maintain navigation during the dry part of the season, for a limited trade.

Should the future business increase, so as to require an additional supply of water beyond the sources now contemplated, it

can be obtained by constructing additional reservoirs, in the valleys of other streams, convenient to the canal and at comparatively reasonable cost.

All of which is respectfully submitted,

JOHN D. FAY,
Division Engineer.

ALBANY, *January 12th, 1857.*

PROFILE OF THE ERIE CANAL WESTERN DIVISION.

Showing the Condition of the Enlargement, January 1st
1857.

Western Division 147 ^M/₂

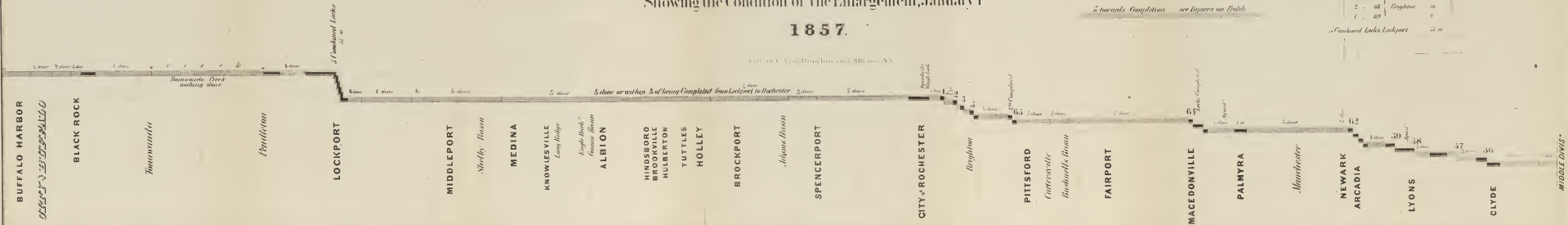
Explanation

Completed
2 towards Completion see figures on Profile
1 69

List of Locks

No.	Up from Albany	ft.
36	4 p. from Albany	6
37	"	7
38	"	8
39	"	10
60	"	8
61	"	8
62	"	8
63	"	10
64	"	10
65	"	16
5	"	1
3 m 67	"	10
2 - 68	Brighton	10
1 - 69	"	9

Combined Locks Lockport 15 10



Journal

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STATEMENT No. 1,

Showing the number and compensation of engineers employed from January 1st to February 9th, 1856, inclusive, on the 1st residency of the Western division of the enlargement of the Erie canal.

W. H. H. GERE, Resident Engineer.

Name and nature of service rendered.	Time employed. months.	Rate of compensation. per year.	Am
Wm. H. H. Gere, resident engineer,	1 $\frac{1}{3}$	\$1,700	\$188 89
do travel,....			58 86
	days.	per day.	
Thos. M. Sherman 1st ass't engni'r,	35	4 00	140 00
Henry Pomeroy, do.....	35	4 00	140 00
Samuel P. Fenn, 2nd do.....	35	2 75	96 25
H. M. Ellsworth, do.....	35	2 75	96 25
Geo. U. Pomeroy, do.....	35	2 75	96 25
J. C. Schermerhorn, do.....	35	2 75	96 25
James Brown, leveler,.....	35	2 50	87 50
Charles L. Gaul, do.....	35	2 00	70 00
W. F. Tompkins, do.....	31	2 00	62 00
Martin Van Brocklin do.....	35	2 00	70 00
William E. Wood, rodman,.....	35	1 50	52 50
Lyman A. Rogers, do.....	35	1 50	52 50
Henry A. Norris, do.....	35	1 50	52 50
Gustavus Mills, do.....	35	1 50	52 50
William H. Crosby, tapeman,.....	35	1 25	43 75
E. G. Barnard, do.....	35	1 25	43 75
E. W. Cummings, do.....	22	1 25	27 50
M. W. Goodrich, do.....	30	1 25	37 50
Jacob Schaub, axeman,.....	35	1 25	43 75
Henry Wilson, do.....	35	1 25	43 75
M. L. Bates, do.....	35	1 25	43 75
George H. Mundy, do.....	35	1 25	43 75

Name and nature of service rendered.	Time employed. days,	Rate of compensation. per day.	Amount.
Frederick Osborne, draughtsman,..	35	\$2 50	\$87 50
Leman Gardner, travel,.....	..	....	37 13
John N. Budlong, clerk,.....	35	2 00	70 00
Richard L. Howe, inspector,	35	2 00	70 00
John Green, do.....	35	3 00	105 00
			<hr/> \$2,109 38
Deduct traveling expenses,.....		\$95 99	
do superintending and inspecting,....		175 00	
		<hr/>	270 99
Engineering proper,.....			<hr/> \$1,838 39 <hr/>

No. 1.—(CONTINUED.)

Showing the number and compensation of engineers employed from February 10th to December 31st, 1856 inclusive, on the 1st residency of the Western division of the enlargement of the Erie canal.

ENSIGN BENNETT, Resident engineer.

Name and nature of service rendered.	Time employed. Months.	Rate of compensation. Per year.	Amount.
Ensign Bennett,	10 $\frac{2}{3}$	\$1,700	\$1,512 53
do travel,			340 50
	Days.	Per day.	
Wm. H. H. Gere, in closing up office business,.....	5	\$5 50	27 50
Thomas M. Sherman, 1st ass't eng'r,	275	4 00	1,100 00
Henry Pomeroy, do	244	4 00	976 00
Samuel P. Fenn, 2d do	279	2 75	767 25
Henry M. Ellsworth, do	279	2 75	767 25
George W. Pomeroy, do	84	2 75	231 00
do travel,.....			5 09
A. D. Adams, 2d ass't engineer,...	79	2 75	217 25
J. C. Schermerhorn, do ...	43	2 75	118 25
do do ...	236	3 00	708 00
Wm. E. Wood, leveler,.....	72	2 00	144 00
A. D. Adams, do	193	2 00	386 00

Name and nature of service rendered.	Time employed. Days.	Rate of compensation. Per day.	Amount.
Gustavus Mills, leveler,.....	6	\$2 00	\$12 00
Martin Van Brocklin, do	43	2 00	86 00
John B. Benton, do	144	2 00	288 00
Charles L. Gaul, do	277	2 00	554 00
William E. Wood, rodman,.....	12	1 50	18 00
U. T. Mundy, do	63	1 50	94 50
Lyman A. Rogers, do	84	1 50	126 00
Henry A. Norris, do	53	1 50	64 50
do travel,.....			5 06
Gustavus Mills, rodman,.....	43	1 50	64 50
Chs. L. Smith, do	267	1 50	400 50
John U. Whallon, do	195	1 50	292 50
George H. Mundy, do	58	1 50	87 00
E. U. Cummings, do	236	1 50	354 00
do travel,.....			5 06
William H. Crosby, tapeman,	48	1 25	60 00
George A. Harrington, do	227	1 25	283 75
E. G. Barnard, do	32	1 25	40 00
John U. Whallon, do	54	1 25	67 50
H. U. Goodrich, do	15	1 25	18 75
E. U. Cummings, do	43	1 25	53 75
Charles U. Hopkins, do	264	1 25	330 00
James Palmer, do	130	1 25	162 50
Henry P. Wilson, axeman,	43	1 25	53 75
Jacob Schaub, do	8	1 25	10 00
B. F. Price, do	271	1 25	338 75
Clark Potts, do	236	1 25	295 00
George H. Mundy, do	43	1 25	53 75
Egbert Peer, do	236	1 25	295 00
M. L. Bates, do	43	1 25	53 75
James M. Ford, do	236	1 25	295 00
Frederick Osborne, draughtsman,..	79	2 75	217 25
do do ..	200	2 50	500 00
do travel,.....			1 44
John B. Müller, draughtsman,....	43	2 75	118 25
do do	156½	3 00	469 50

Name and nature of service rendered.	Time employed. Days.	Rate of compensation. Per day.	Amount.
John N. Budlong, clerk,.....	43	2 00	\$86 00
do do	236	2 25	531 00
Richard L. Howe, inspector,	279	2 00	558 00
Orator F. Cook, do	236	2 60	472 00
John R. Cross, do	172	2 00	344 00
John Green, inspector and supern't,	74	3 00	222 00
D. H. Ainsworth, travel,.....			6 98

\$15,689 91

Deduct travelling expenses,	\$359 04	
do superintending and inspecting,...	1,596 00	
	<hr/>	1,955 04

Engineering proper,..... \$13,734 87

SUMMARY OF ITEMS.—1st Residency.

	Expenditures by W. H. H. Gere, res. en.	Expenditures by E. Bennett, res'dt engin'r.	Totals.
Engineering proper,.....	\$1,838 39	\$13,734 87	\$15,573 26
Superintend'g and inspet'g,	175 00	1,596 00	1,771 00
Stationery,	27 87	205 64	233 51
Office rent, fuel and lights,	63 57	339 23	402 80
Postage, telegraph and exp.	3 19	67 25	70 44
Affidavit, ... ..	.....	30 38	30 38
Traveling expenses,	95 99	359 04	455 03
Miscellaneous,.....	7 88	97 91	105 79
Totals,.....	<u>\$2,211 89</u>	<u>\$16,430 32</u>	<u>\$18,642 21</u>

No. 1.—(CONTINUED.)

Showing the number and compensation of engineers employed during the year 1856, on the 2d residency of the Western division of the enlargement of the Erie canal.

RICHARD VERNAM—Resident Engineer.

Name and nature of service rendered.	Time employed, Days.	Rate of compensation, Per year.	Amounts.
Richard Vernam, resident engineer,	365	\$1,700 00	\$1,700 00
do travel,.....			553 32
C. Q. Newcombe, first asst eng'r,..	35	Per day. 4 00	140 00
L. L. Nicholls, do do	197	4 00	788 00
do travel,.....			34 17
Byron M. Hanks, first ass't eng'r ..	279	4 00	1,116 00
do travel,.....			11 20
Charles B. Morse, second as't eng'r,	292	2 75	803 00
C. Q. Newcombe, do do	14	2 50	35 00
Byron M. Hanks, do do	35	2 75	96 25
Charles M. Plumb, do do	216	3 00	648 00
George W. White, do do	314	2 75	863 50
Byron Holley, do do	314	2 75	863 50
Wm. H. Whallon, ass't in office,..	114	1 75	199 50
do do do	158	2 00	316 00
George Arnoldt, draughtsman,....	235	3 00	705 00
do do	79	3 25	256 75
Robert H. Hill, do	156	2 50	390 00
Joseph W. Sprague, do	294	2 50	735 00
Cyrus Beardsley, leveller,.....	78	2 00	156 00
do do	157	2 25	353 25
do do	79	2 50	197 50
Henry S. Lucas, do	75	2 00	150 00
Horace Jones, do	264½	2 00	493 00
John H. Follett, do	314	2 00	628 00
Daniel Cushing, do	156	1 75	273 00
Daniel Cushing, leveller,.....	158	2 00	316 00
George T. Barnard, do	225	2 00	450 00
A. L. Mortimer, rodman,.....	21	1 50	31 50
H. A. Babcock, do	93	1 50	139 50

Name and rank.	No. of days employed.	Rate of compensation.	Amount.
E. A. Perkins, rodman,	314	\$1 50	\$471 00
C. H. Downing, do	202½	1 50	303 75
R. A. Britton, do	69½	1 50	104 25
C. A. Perrin, do	158	1 50	237 00
do axeman,	156	1 25	195 00
Wm. D. Perrin, do	69½	1 25	86 87
Thomas Dooley, do	229	1 25	286 25
Leander Shaw, do	228½	1 25	285 62½
S. D. Newcombe, inspector,	136	2 00	272 00
S. H. Spencer, do	156	2 50	390 00
do do	79	2 75	217 25
do do	79	3 00	237 00
do do travel,			19 44
Russell A. Britton, do	32½	2 00	65 00
A. H. Waterman, do	292	2 00	584 00
John J. Bowen, do	168	2 00	336 00
do do	70	2 25	157 50
Henry A. Smith, do	253	2 50	632 50
Thomas G. Spencer, do	164	3 00	492 00
William W. Selye, clerk,	225½	2 00	451 00
do do	79	2 25	177 75
			<u>\$19,443 12</u>
Deduct travelling expenses,	\$618 13		
do superintending and inspecting,	3,383 25		
			<u>4,001 38</u>
Engineering proper,			<u>\$15,441 74</u>
SUMMARY OF ITEMS.—2d Residency.			
Engineering proper,			\$15,441 74
Superintending and inspecting,			3,383 25
Stationery,			173 67
Office rent, fuel, light,			606 62
Postage, telegraph and express,			135 83
Affidavits,			56 27
Travelling expenses,			618 13
Miscellaneous,			55 48
Total,			<u>\$20,470 99</u>

No. 1.—(CONTINUED.)

Showing the number and compensation of Engineers employed from January 1st., to March 1st., 1856 inclusive, on the 3d residency of the Western division of the enlargement of the Erie canal.

THEOPHILUS WILLIAMS—Resident Engineer.

Name and nature of service rendered.	Time employed. months.	Rate of compensation. per year.	Amount.
Theophilus Williams, resd't eng'r,	3	\$1,700	\$425 00
do do travel,.....			109 74
	days.	per day.	
Hathaway Hurd, 1st ass't engineer,	78	\$4 00	312 00
do do do travel,..			30 58
Thomas Goodsell, do	78	4 00	312 00
Howard Soule, Jr., 2d ass't engineer,	78	3 00	234 00
do do do travel,..			16 38
George Cushing Jr, do	78	2 75	214 50
George W. Pierce, do	78	2 75	214 50
George S. Evarts, do	78	2 75	214 50
John Q. Pierce, do	78	2 75	214 50
W. W. Ruggles, do	78	2 75	214 50
Charles F. Smith, leveller,.....	78	2 00	156 00
William J. Latimer, do	78	2 00	156 00
Eugene L. Soule, do	78	2 00	156 00
Isaac W. Hurd, do	78	2 00	156 00
George E. Hayward, do	62	2 00	124 00
Charles W. Holland, do	37	2 00	74 00
Francis Mahler, do	78	2 00	156 00
Levi C. Williams, draughtsman,..	78	2 00	156 00
William R. Torrey, ass't in office,	78	1 50	117 00
Edward Pomeroy, do	78	1 50	117 00
George C. Northrup, do	78	1 50	117 00
Roger Sherman, rodman,.....	78	1 50	117 00
Warren G. Bennett, do	72	1 50	108 00
Henry M. Ball, do	78	1 50	117 00
Augustus B. Fitch, do	78	1 50	117 00
John Babcock, do	78	1 50	117 00
Malcolm E. Williams, do	78	1 50	117 00
Asa H. Holgate, do	78	1 50	117 00
Newton T. Hume, tapeman,.....	78	1 25	97 50

Name and nature of service rendered	Time employed. Days.	Rate of compensation. Per day.	Amounts.
Isaac E. Secor, tapeman,.. ..	78	1 25	\$97 50
Edwin J. Close, do	78	1 25	97 50
William Norton, do	78	1 25	97 50
Daniel H. Fitzhugh, do	77	1 25	96 25
Daniel Pinney, axeman,.....	78	1 25	97 50
John Kearney, do	78	1 25	97 50
Patrick O. Farrell, do	68	1 25	85 00
Harvey T. Hume, do	78	1 25	97 50
Ira D. Watson, do	31	1 25	38 75
George R. Pettit, do	42	1 25	52 50
Samuel Cook, do	42	1 25	52 50
Chauncey Bromley, do	78	1 25	97 50
John K. Anderson, office clerk,..	78	2 75	214 50
do do travel,..			56 57
J. B. Mansfield, clerk,.....	54	2 00	108 00
William Butler, inspector,.....	34	2 00	68 00
Erastus A. Davis, do	23	2 00	46 00
Peter K. Torrey, do	78	2 00	156 00
			<u>\$6,576 27</u>
Deduct traveling expenses,.....	\$213 27		
do superintending and inspecting,..	270 00		
			<u>\$483 27</u>
Engineering proper,			<u><u>\$6,093 00</u></u>

No. 1.—(CONTINUED.)

Showing the number and compensation of engineers employed from April 1st, to Dec. 31st, 1856 inclusive, on the 3d residency of the Western division of the enlargement of the Erie canal.

H. V. B. BARKER—Resident Engineer.

Name and nature of the service.	Time employed. Months.	Rate of compensation. Per year.	Amounts.
H. V. B. Barker, resident engineer,	9	\$1,700 00	\$1,275 00
travel,.....			396 00
	Days.	Per day.	
Thos. Goodsell, first ass't engineer,	236	\$4 00	944 00
do travel,..			6 77
Henry C. Ruggles, first ass't eng'r,	236	4 00	944 00
do travel,..			4 50

Name and nature of service rendered.	Time employed. Days.	Rate of compensation per day.	Amounts.
Hathaway Hurd, first ass't engin'r,	6	4 00	\$24 00
Howard Soule, jr., second do	150	3 00	450 00
George Cushing, jr., do	44	2 75	121 00
Charles F. Smith, do	236	2 75	649 00
George S. Evarts, do	42	2 75	115 50
Winthrop W. Ruggles, do	236	2 75	649 00
Henry S. Lucas, do	200	2 75	350 00
John Q. Pierce, do	139	2 75	382 25
George W. Pomeroy, do	64	2 75	176 00
John Daugherty, do	99	3 00	297 00
Lawrence Van Wycke do	131	2 75	360 25
Jedediah J. Wanzer, do	60	2 75	165 00
William J. Latimer, leveler,.....	20	2 00	40 00
Henry M. Ball, do	184	2 00	368 00
Charles W. Holland, do	236	2 00	472 00
Eugene L. Soule, do	52	2 00	104 00
Isaac N. Hurd, do	11	2 00	22 00
George C. Hayward, do	236	2 00	472 00
Wm. E. Wood, do	179	2 00	358 00
Jas. M. Rushmore, do	158	2 00	316 00
Newton T. Hume, do	79	2 00	158 00
George L. Burrows, rodman,.....	223	1 50	334 50
Roger Sherman, do	20	1 50	30 00
Augustus B. Fitch, do	207	1 50	310 50
John Babcock, do	236	1 50	354 00
C. F. Rorebeck, do	215	1 50	322 50
D. H. Fitzhugh, do	39	1 50	58 50
J. L. Adams, do	154	1 50	231 00
Geo. H. Bedell, do	116	1 50	174 00
John McDermott, do	11	1 50	16 50
Asa H. Holgate, do	29	1 50	43 50
Warren G. Bennett, do	26	1 50	39 00
Malcom E. Williams, do	17	1 50	25 50
D. M. Inman, do	79	1 50	118 50
N. T. Hume, tapeman & chainman,	78	1 25	97 50
Geo. E. Cook, do	165	1 25	206 25
W. P. Barker, do	131	1 25	163 75

Name and nature of service rendered.	Time employed. Days.	Rate of compensation. Per day.	Amount.
D. M. Inman, tapeman & chainman	79	1 25	\$98 75
Edwin J. Close, do	78	1 25	97 50
Albert C. Goff, do	210	1 25	262 50
Isaac E. Secor, do	26	1 25	32 50
Wm. Norton, do	17	1 25	21 25
Daniel H. Fitzhugh, do	174	1 25	217 50
Geo. R. Pettit, do	57	1 25	71 25
Willard Stokes, axeman,.....	65	1 25	81 25
Harvey T. Hume, do	26	1 25	32 50
Smith Tucker, do	221	1 25	276 25
Daniel Pinney, axeman,.....	13	1 25	16 25
D. M. Inman, do	67	1 25	83 75
Ira D. Watson, do	11	1 25	13 75
C. Bromley, do	6	1 25	7 50
John Kearney, do	24	1 25	30 00
David E. Hume, do	210	1 25	262 50
Samuel Cook, do	231	1 25	288 75
J. B. Parsons, do	1	1 25	1 25
A. T. Harrington, do	14	1 25	17 50
Francis Mahler, draughtsman,....	236	2 50	589 50
L. C. Williams, do	89	1 75	155 75
Robert H. Hill, do	5	2 75	13 75
do do	49	2 50	122 50
J. K. Anderson, office clerk,....	78	2 75	214 50
do do	158	2 50	395 00
do travel,.....			11 12
John H. Denio, clerk,.....	158	2 50	395 00
J. B. Mansfield, assistant in office,	236	1 75	413 00
William R. Torrey, do	115	1 50	172 50
Edward Pomeroy, do	78	1 50	117 00
Newton T. Hume, do	79	1 50	118 50
George C. Northrup, inspector,..	92	1 75	161 00
J. M. K. Hilton, do ..	78	3 00	234 00
do do ..	158	2 50	395 00
D. A. Mason, do ..	61	1 75	106 75
do do ..	117	1 50	175 50

Name and nature of service rendered.	Time employed, Days.	Rate of compensation, Per day.	Amounts.
William Butler, inspector,.....	157	\$2 00	\$314 00
do do	58	1 75	101 50
C. T. Foster, do	221	1 75	386 75
George W. Owen, do	225	1 75	393 75
David Smith, do	224	2 00	448 00
H. J. Holsenburgh, do	142	1 50	213 00
do do do	53	1 75	92 75
			<hr/>
			\$19,997 39
Deduct traveling expenses,.....		\$418 39	
do superintending and inspecting,		3,028 00	
		<hr/>	3,440 39
			<hr/>
Engineering proper,.....			\$16,557 00
			<hr/>

SUMMARY OF ITEMS.—2d Residency.

	Expenditures by The's. Wil- liams, res. en.	Expenditures by H. V. B. Barker, res. en.	Totals.
Engineering proper,.....	\$6,093 00	\$16,557 00	\$22,650 00
Superintending and insp'g,	270 00	3,022 00	3,292 00
Stationery,.....	39 78	189 45	229 23
Office rent, fuel and lights,	269 67	436 30	705 97
Postage, tel. and express,.	17 30	80 66	97 96
Affidavits,	14 88	.....	14 88
Traveling expenses,.....	213 27	418 39	631 66
Miscellaneous, .....	.....	96 32	96 32
	<hr/>	<hr/>	<hr/>
Total,.....	\$6,917 90	\$20,800 12	\$27,718 02
	<hr/>	<hr/>	<hr/>

No. 1—(CONTINUED.)

Showing the number and compensation of engineers employed during the year 1856, on the 4th residency of the Western division of the enlargement of the Erie canal.

R. H. COLBURN—Resident Engineer.

Name and nature of service rendered.	Time employed, Days.	Rate of compensation, Per year.	Amount.
Ransom H. Colburn, resd't engin'r,	331	\$1,700	\$1,535 82
do do travel,			655 53
		Per day.	
John A. Ditto, first assist'nt eng'r..	314	4 00	1,256 00
Stephen A. Charles, do do	78	4 00	312 00
Stephen F. Gooding, do do	237	4 00	948 00
Charles B. Morse, sec. do do	24	2 75	66 00
Charles S. Montgomery, do do	131	2 75	360 25
Peter P. Wintermute, do do	67	2 75	184 25
Stephen D. Charles, do do	235	2 75	646 25
James O. McClure, do do	78	2 75	214 50
do do do	237	3 00	711 00
Walter Griswold, do do	210	2 75	577 50
Andrew R. Trew, do do	236	2 75	649 00
Thomas Petingate, draughtsman,..	78	2 75	214 50
do do do	46	2 50	115 00
Gustavus G. Berger, do do	236	3 00	708 00
Ed. Chrysler, do do	8	3 00	24 00
F. S. Beebe, do do	78	2 75	214 50
A. J. Conner, assis't do do	177	2 00	354 00
Albert Adler, do do	28	2 25	63 00
Henry S. Whallon do do	218	2 00	436 00
George F. McKnight, leveller,....	44	2 00	88 00
do do travel,			46 75
George A. Watson, leveller,	39	2 00	78 00
Alfred W. Barrett, do	297	2 00	594 00
J. M. Rushmore, do	123	2 00	246 00
Charles A. Clinton, do	259	2 00	518 00
Stephen D. Charles, do	79	2 00	158 00
George W. Maxon, do	221	2 00	442 00
Andrew R. Trew, do	36	2 00	72 00

Name and nature of service rendered.	Time employed, Days.	Rate of compensation, Per day.	Amount.
George W. Maxon, rodman,	31	1 50	\$46 50
Charles A. Clinton, do	52	1 50	78 00
M. Rickey, Jr., do	47	1 50	70 50
E. G. Armstrong, do	95	1 50	142 50
Cyrus L. Gorton, do	267	1 50	400 50
Rodney A. Durkee, do	217	1 50	325 50
Ed. Chrysler, do	44	1 50	66 00
A. Stewart Gooding, do	79	1 50	118 50
Charles Jermain, axeman,	270	1 25	337 50
Thomas G. Austin, do	25	1 25	31 25
Richard B. Wells, do	4	1 25	5 00
John Swift, do	45	1 25	56 25
John Schempf do	45	1 25	56 25
William J. Hawkins, do	182	1 25	227 50
Arthur Waite, do	213	1 25	266 25
Henry A. Norton, tapeman,	158	1 00	158 00
A. Stewart Gooding, do	54½	1 25	68 13
R. P. Tuthill, inspector,	314	2 00	628 00
B. A. Andrews, do	127	2 50	317 50
do do	92	3 00	276 00
Benjamin M. Wood, do	52	1 75	91 00
do do	27	1 50	40 50
David Cooper, do	246	2 00	492 00
Hiram W. Perce, do	174	3 00	522 00
Civilian Reynolds, do	232	1 75	406 00
do do	78	1 50	117 00
Smith Reynolds, do	237	2 00	474 00
Richard Willing, do	42	3 00	126 00
J. O. Ostrom, do	140	2 50	350 00
do do	79	3 00	237 00
George W. Bull, clerk,	49	3 00	147 00
do do travel,...			16 13
Edward G. Gardner, do	272	3 00	816 00
do do travel,...			5 00

 \$20,003 11

Deduct traveling expenses,	\$723 51	
do superintending and inspecting,	4,077 00	
		<u>4,800 51</u>
Engineering proper,	\$15,202 60	

SUMMARY OF ITEMS—4th Residency.

Engineering proper,	\$15,202 60
Overseers and inspectors,	4,077 00
Stationery,	313 21
Office rent, fuel and lights,	522 32
Postage, telegraph and express,	187 32
Affidavits,	39 01
Traveling expenses,	723 51
Miscellaneous,	217 61
Total,	<u>\$21,282 58</u>

No. 1.—(CONTINUED.)

Showing the number and compensation of engineers employed from January 1st to February 10th, 1856 inclusive, on the Genesee Valley canal.

ORVILLE W. STOREY—Resident Engineer.

Name and nature of service rendered.	Time employed. Days.	Rate of compensation. Per year.	Amount.
Orville W. Storey, resident eng'r, ..	41	\$1,700	\$186 81
do travel,			84 36
		Per day.	
N. E. Brown, 2d ass't engineer, ...	20	2 75	55 00
George W. Wilson, do ...	35	2 50	87 50
D. Emmons Seaver, leveler,	35	2 00	70 00
William L. Windsor, rodman,	35	1 37½	48 13
James F. Renwick, do	35	1 25	43 75
Ambrose C. Webber, chainman, ...	35	1 25	43 75
Arnold M. Smith, axeman,	35	1 25	43 75
			<u>\$663 05</u>
Deduct traveling expenses,			84 36
Engineering proper,			<u>\$578 69</u>

No. 1.—(CONTINUED.)

Showing the number and compensation of engineers employed from February 10th to December 31st, 1856 inclusive, on the Genesee Valley canal.

HUGH M. SEVERENCE—*Resident Engineer.*

Name and nature of service rendered.	Time employed. Days.	Rate of compensation. Per year.	Amount.
Hugh M. Severence, resident eng'r,	324	\$1,700	\$1,513 19
do travel,			483 66
		Per day.	
A. C. Bishop, 1st ass't engineer,..	234	4 00	936 00
do 2d do ..	37	3 00	111 00
Geo. W. Wilson, do ..	20	2 50	50 00
George Porter, do ..	236	2 75	649 00
D. Emmons Seaver, do ..	222	2 50	555 00
Wm. M. Whallon, ass't in office, ..	47	2 00	94 00
do do ..	44	1 75	77 00
D. Emmons Seaver, leveler,	43	2 00	46 00
Wm. L. Windsor, do	279	2 00	558 00
Volney Mills, do	227	2 00	454 00
A. H. Judson, ass't do	162	1 75	283 50
Volney Mills, rodman,	37	1 50	55 50
J. F. Renwick, do	78	1 25	97 50
A. H. Judson, do	36	1 50	54 00
H. A. Hutchins, do	267	1 50	400 50
A. M. Smith, do	92	1 50	138 00
Shedd Taggart, do	70	1 50	105 00
Wm. Rumble, surv. and draught.,	223	3 00	669 00
Junius S. Mix, surveyor,	111	2 50	302 50
Frank T. Sanders, chainman,	170	1 25	212 50
Shedd Taggart, axeman,	146	1 25	182 50
J. F. Renwick, do	36	1 25	45 00
Benj. Chambers, do	132	1 25	165 00
John King, do	19½	1 25	24 38
Nelson Hewitt, inspector,	244	2 00	488 00
W. Kirkpatrick, do	55	2 00	110 00
Patrick Clark, laborer,	7	1 25	8 75
A. Judd, do	4	1 25	5 00
M. Kennedy, do	3	1 25	3 75

Name and nature of service rendered.	Time em- ployed. Days.	Rate of com- pensation. Per day.	Amount.
Patrick Pirle, laborer,.....	1	\$1 25	\$1 25
T. Laughney, do	1	1 25	1 25
J. A. Mead, clerk,.....	279	2 50	697 50
			<hr/> \$9,617 23
Deduct travelling expenses,.....		\$483 66	
do superintending and inspecting,		598 00	
do labor,		20 00	
		<hr/>	\$1,101 66
Engineering proper,.....			<hr/> \$8,515 57 <hr/>

SUMMARY OF ITEMS.—*Genesee Valley Canal.*

	Expenditures by O.W.Story, resident eng.	Expenditures by H.M.Seve- rence, res. en.	Total.
Engineering proper,.....	\$578 69	\$8,515 57	\$9,094 26
Superintending & inspect'g,		598 00	598 00
Stationery,.....	4 28	104 27	108 55
Office rent,fuel and light,..	20 26	279 81	300 07
Postage,telegraph,express,	2 76	47 92	50 68
Affidavits,.....	4 88	16 38	21 26
Travelling expenses,.....	84 36	483 66	568 02
Miscellaneous,.....		7 44	7 44
Labor,.....		20 00	20 00
Total,.....	<u>\$695 23</u>	<u>\$10,073 05</u>	<u>\$10,768 28</u>

No. 1—(CONTINUED.)

The expenditures for Engineering on the Western Division of the State canals for the year 1856, have been as follows, by

ITEMS.	W. H. Gere.	Ensign Ben- net.	Richard Ver- nam.	Th. Williams	H. V. B. Bar- ker.	R. H. Col- burn.	O. W. Storey	H. M. Sever- ence.	Totals.
Engineering services proper,	\$1,838 39	\$13,734 87	\$15,441 74	\$6,093 00	\$16,557 00	\$15,202 60	\$578 69	\$8,515 57	\$77,961 86
Overseers and inspectors,	175 00	1,596 00	3,383 25	270 00	3,022 00	4,077 00	.....	598 00	13,121 25
Stationery,	27 87	205 64	173 67	39 78	189 45	313 21	4 28	104 27	1,058 17
Office rent, fuel and lights,	63 57	339 23	606 62	269 67	436 30	522 32	20 26	279 81	2,537 78
Postage, telegraph and express,	3 19	67 25	135 83	17 30	80 66	187 32	2 76	47 92	542 23
Affidavits, .....	.....	30 38	56 27	14 88	.....	39 01	4 88	16 38	161 80
Travelling expenses,	95 99	359 04	618 13	213 27	418 39	723 51	84 36	483 66	2,996 35
Labor, .....	.....	.....	.....	.....	.....	.....	.....	20 00	20 00
Miscellaneous,	7 88	97 91	55 48	.....	96 32	217 16	.....	7 44	482 64
	\$2,211 89	\$16,430 32	\$20,470 99	\$6,917 90	\$20,800 12	\$21,282 58	\$695 23	\$10,073 05	\$98,882 03
Salary of C. W. Wentz, division engineer, from January 1st, to February 18, 1856, at \$2,000.00 per year,								\$267 76	
do do do traveling expenses,								120 72	
Salary of J. D. Fay, division engineer, from February 18, to December 31, 1856, at \$2,000.00 per year,								1,735 60	
do do do traveling expenses,								675 60	2,799 68
Aggregate amount,									\$101,681 76

SUMMARY OF ENGINEERING.

By whom expended.				Enlargement o Erie canal.	Genesee Val- ley canal.
C. W. Wentz, division engineer,.....				\$370 72	\$17 76
J. D. Fay, do do				1,965 21	445 99
Wm. H. H. Gere, resident engineer,..				2,211 89	
Ensign Bennett, do do ..				16,430 32	
Richard Vernam, do do ..				20,470 99	
T. Williams, do do ..				6,917 90	
H. V. B. Barker do do ..				20,800 12	
R. H. Colburn, do do ..				21,282 58	
Orville W. Storey, do do ..					695 23
Hugh M. Severence do do ..					\$10,073 05
Total,				<u>\$90,449 73</u>	<u>\$11,232 03</u>

STATEMENT No. 2.

Work under contract, let prior to passage of act, chap. 329, Laws of 1854.

STATEMENT showing the length, number of structures, character of work, estimated cost at contract prices, amount done in 1856, whole amount done, and amount remaining to be done, on the Western Division of the Enlargement of the Erie canal.

First Subdivision.

Length in miles.	No. of structures	Character of work.	Estimate at contract prices.	A'mt done in 1856.	Whole am't done.	Amount remaining to be done.
1.13	.....	West part of section No. 212,.....	\$31,914 00	\$1,367 00	\$30,729 00	\$1,185 00
.34	.....	Section No. 219,.....	15,393 00	3,353 00	14,615 00	778 00
	.....	do 231,.....	9,686 00	.....	9,686 00	Abandoned.
.12	1	Lock at Lock Berlin,.....	22,183 73	809 73	22,183 73	Completed.
	2	Valve gates for Clyde and Lock Berlin locks,	1,246 57	618 57	1,246 57	do
	1	Melvin brook culvert,.....	11,368 77	.....	11,368 77	do
	1	Waste weir on sec. No. 212,.....	1,006 60	83 00	841 00	165 00
1.59	5	Totals,.....	\$92,798 07	\$6,231 30	\$90,670 07	\$2,128 00

No. 2.—(CONTINUED.)

Work under contract, let prior to passage of act, chap. 329, Laws of 1854.

STATEMENT showing the length, number of structures, character of work, estimated cost at contract prices amount done in 1856, whole amount done, and amount remaining to be done, on the western division of the enlargement of the Erie canal.

Second Subdivision.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
.18	.....	Sec. No. 1, east of Rochester,	\$2,524 00	.....	\$2,073 00	\$451 00
1.47	.....	Sec. No. 2, do	35,242 00	.....	33,572 00	1,670 00
	2	Culver road, Monroe-st. bridges,	3,122 00	.....	3,122 00	Abandoned.
	3 sets.	Valve gates for locks 1, 2, 3, east of Roch'ter,	3,274 87	.....	3,274 87	00
1.55	5	Totals,	\$44,162 87	.....	\$42,041 87	\$2,121 00

No. 2.—(CONTINUED.)

Work under contract, let prior to passage of act, chap. 329, Laws of 1854.

STATEMENT showing the length, number of structures, character of work, estimated cost at contract prices, amount done in 1856, whole amount done, and amount remaining to be done, on the western division of the enlargement of the Erie canal.

Third Subdivision.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
1.00	.....	Section No. 22, at Brockport,.....	\$13,266 00	.....	\$13,266 00	Abandoned.
		Medina section,	76,230 00	\$4,843 00	73,530 00	\$2,700 00
	1	Medina aqueduct,.....	41,648 00	.....	41,648 00	Abandoned.
	4	Culverts on section No. 22, at Brockport, ..	3,080 00	.....	3,080 00	do
1.00	5	Totals,.....	\$134,224 00	\$4,843 00	\$131,524 00	\$2,700 00

No. 2.—(CONTINUED.)

Work under contract, let prior to passage of act, chap. 329, Laws of 1854.

STATEMENT showing the length, number of structures, character of work, estimated cost at contract prices, amount done in 1856, whole amount done and amount remaining to be done, on the western division of the enlargement of the Erie canal.

Fourth Subdivision.

Length in miles.	No. of structures	Character of work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
.50		Section No. 5, Mountain Ridge,	\$40,367 63	.....	\$40,367 63	Completed.
.50		do 6, do	98,992 00	\$8,887 00	60,173 00	\$38,819 00
.50		do 7, do	96,168 00	17,059 00	59,146 00	37,022 00
.50		do 8, do	90,015 00	15,580 00	75,849 00	14,166 00
.50		do 9, do	86,336 00	17,438 00	62,485 00	23,851 00
.50		do 10, do	94,734 00	3,706 00	57,663 00	37,071 00
.50		do 11, do	42,458 00	.....	42,458 00	Abandoned.
.50		do 12, do	72,265 38	.....	72,265 38	Completed.
.50		do 13, do	96,387 00	2,118 00	95,377 00	1,010 00
.36		do 14, do	75,160 00	832 00	74,535 00	. 625 00
	1	Erie basin and slips, city of Buffalo,	304,000 00	41,539 00	288,419 00	15,581 00
	1	Ship lock, Black Rock,	63,412 00	.....	61,412 00	2,000 00
1.63		Sections 1 and 2, city of Buffalo,	66,021 00	6,104 00	66,021 00	Abandoned.
6.49	2	Totals,	\$1,226,316 01	\$113,263 00	\$1,056,171 01	\$170,145 00

No. 2.—(CONTINUED.)

Work under contract, let prior to passage of act, chap. 329, Laws of 1854.

STATEMENT showing the length, number of structures, character of work, estimated cost at contract prices, amount done in 1856, whole amount done, and amount remaining to be done, on the

Genesee Valley Canal.

Length in miles.	No. of structures	Character of Work.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount done.	Amount remaining to be done.
2.96	4	Sections No. 79, 80, and 81,.....	\$19,379 05	.....	\$19,280 00	\$99 05
3.09	4	do 85, 86, and 87,.....	12,120 93	.....	12,120 93	Completed.
2.69	1	do 88, 89, and 90,.....	15,000 00	.....	13,630 00	1,370 00
2.99	3	do 92, 93, and 94,.....	38,903 14	\$1,003 14	38,903 14	Completed.
3.09		do 95, 96, and 97,.....	5,930 83	.....	5,930 83	do
3.90	4	do 99, 100, 101, and 102,.....	17,000 00	1,250 00	16,850 00	150 00
3.83	3	do 103, 104, 105, 106,	19,500 00	2,730 00	18,650 00	850 00
	2	Rockville reservoir,	5,767 07	.....	5,767 07	Completed.
1.25	6	Locks 72, 73, 74, 75 76, and 77, and sec. 78,	32,784 65	.....	32,784 67	do
	3	do 78, 79, and 80,.....	27,047 49	.....	27,047 49	do
	3	do 81, 82, and 83,.....	24,244 61	.....	24,244 61	do
	6	do 84, 85, 86, 87, 88, and 89,	45,994 07	.....	45,994 07	do
	3	do 90, 91, and 92,.....	20,346 81	.....	20,346 81	do
	5	do 93, 94, 95, 96, and 97,	70,500 00	28,050 00	69,780 00	720 00
	2	do 98 and 99,	14,598 82	.....	14,598 82	Completed.
	3	do 100, 101, and 102,.....	31,741 31	831 31	31,741 31	do
	3	do 103, and 104, and Olean aqueduct, .	39,739 59	.....	39,739 59	do
	7	Group No. 1 of bridges, secs. 78 to 84,	3,482 18	.....	3,482 18	do

6	Group No. 2 of bridges secs. 85 to 89,.....	4,086 92	.....	4,086 92	do
9	do 3 do 92 to 98,.....	5,404 00	870 00	4,770 00	634 00
13	do 4 do 99 to 106,....	8,382 74	982 74	8,382 74	Completed.
1	Culvert on sec. No. 9,	889 00	.....	889 00	Abandoned.
	Totals,	\$462,843 21	\$35,717 19	\$459,020 16	\$3,823 05

STATEMENT No. 3.

Work under existing contracts, let in pursuance of act, chap. 329, Laws of 1854.

STATEMENT showing the length in miles, number of structures, character of work, engineer's estimate, estimated cost at contract prices, amount done in 1856, whole amount done, and amount remaining to be done, on the western division of the enlargement of the Erie canal.

First Subdivision.

Length in miles.	No. of structures	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1856.	Whole amount of work done.	Amount remaining to be done.
1.69	Section No. 207,.....	\$111,436 00	\$86,054 00	\$9,680 00	\$9,680 00	\$76,374 00
1.18	do 208,.....	25,239 00	19,188 00	5,720 00	5,720 00	13,468 00
1.17	do 209,.....	29,770 00	22,675 00	7,940 00	7,940 00	14,735 00
1.09	do 210,.....	27,605 00	19,488 00	3,140 00	3,140 00	16,348 00
1.09	do 211,.....	28,000 00	19,890 00	4,160 00	4,500 00	15,390 00
0.35	East part of section No. 212,.	17,223 00	15,189 69	.....	15,189 69	.....
0.89	Section No. 213,.....	18,515 00	25,333 00	12,920 00	24,060 00	1,273 00
0.78	do 214,.....	25,350 00	16,666 00	5,140 00	15,840 00	826 00
0.65	do 215,.....	24,715 00	16,233 00	7,840 00	13,220 00	3,013 00
0.63	do 216,.....	20,685 00	16,883 00	7,520 00	14,740 00	2,143 00
1.45	do 217,.....	51,475 00	53,470 00	22,450 58	53,470 58	.....
1.43	do 218,.....	65,980 00	72,090 00	32,300 00	62,400 00	9,690 00
1.03	do 228,.....	28,180 00	24,298 00	5,280 00	13,300 00	10,998 00
1.06	do 229,.....	26,020 00	20,425 00	4,080 00	13,660 00	6,765 00
0.73	do 231,.....	12,440 00	11,881 00	7,040 00	7,260 00	4,621 00
1.05	do 232,.....	18,475 00	22,445 00	11,660 00	13,300 00	9,145 00
1.06	do 233,.....	26,525 00	23,420 00	8,560 00	11,500 00	11,920 00

[Assembly, No. 60.]	0.94	do	234,.....	37,524 00	43,050 00	19,880 00	30,760 00	12,290 00	No. 60.]
	0.91	.....	do	235,.....	22,074 00	22,790 00	11,440 00	13,280 00	9,510 00
	1.01	.....	do	236,.....	26,725 00	21,708 00	7,900 00	14,260 00	7,448 00
	0.99	.....	do	237,.....	22,614 00	20,735 00	9,400 00	13,580 00	7,155 00
	0.99	.....	do	238,.....	32,135 00	24,248 00	11,120 00	12,880 00	11,368 00
	1.01	.....	do	239,.....	41,300 00	34,667 00	22,900 00	31,320 00	3,347 00
	1.03	.....	do	241,.....	30,405 00	27,279 00	12,400 00	17,000 00	10,279 00
	0.86	.....	do	242,.....	31,470 00	15,160 00	6,860 00	7,260 00	7,900 00
	0.89	.....	do	243,.....	18,515 00	12,392 00	4,260 00	7,260 00	5,132 00
	0.52	.....	do	244,.....	9,935 00	10,188 00	1,040 00	2,900 00	7,288 00
12	33		Bridge abutments on sections No. 207 to 244, inclusive,..		79,925 00	52,014 00	10,760 00	35,780 00	16,234 00	177
	9		Iron bridge superstructures, secs. No. 212 to 244, inc.,..		19,538 00	17,456 85	6,400 00	13,891 60	3,565 25	
	24		Timber bridge superstruct's, secs. No. 207 to 244, inc...		14,400 00	11,960 00	8,940 00	9,900 00	2,060 00	
	18		Culverts on sections No. 207 to 244, inclusive,		49,851 00	48,910 00	17,839 43	40,039 43	8,870 57	
	2		Waste weirs on sections Nos. 215 and 218,		3,785 00	3,960 00	1,340 00	2,620 00	1,340 00	
	1		Mud Creek aqueduct,.....		3,040 00	3,040 00	.....	3,040 00	Abandoned.
	.....		Mud Creek aqueduct,.....		26,545 00	31,028 00	19,920 00	22,960 00	8,068 00
	.....	.....	Total,		\$1,027,414 00	\$886,215 12	\$327,830 01	\$567,651 30	\$318,563 82

No. 3.—(CONTINUED.)

Second Subdivision.

Length in miles.	No. of structure's	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1858.	Whole amount of work done.	Amount remaining to be done.
1.43	Section No. 245,.....	\$26,201 00	\$27,588 00	\$18,140 00	\$24,440 00	\$3,148 00
1.00	do 246,.....	29,611 00	25,995 00	11,760 00	12,560 00	13,435 00
1.00	do 247,.....	28,301 00	27,233 00	15,880 00	17,080 00	10,153 00
1.13	do 248,.....	34,725 00	36,963 00	15,500 00	24,600 00	12,363 00
1.12	do 249,.....	33,795 00	43,055 00	14,060 00	22,760 00	20,295 00
1.13	do 250,.....	35,345 00	38,440 00	27,060 00	35,160 00	3,280 00
1.12	do 251,.....	30,938 00	24,589 00	16,120 00	22,120 00	2,469 00
1.14	do 252,.....	36,590 00	31,943 00	13,320 00	19,020 00	12,923 00
1.25	do 253,.....	45,347 00	39,161 00	21,840 00	31,040 00	8,121 00
1.00	do 254,.....	23,918 00	22,624 00	10,580 00	20,340 00	2,284 00
1.00	do 255,.....	30,871 00	27,764 00	11,840 00	19,820 00	7,944 00
1.19	do 256,.....	94,646 00	73,743 00	32,380 00	50,780 00	22,963 00
1.16	do 257,.....	55,015 00	53,870 00	18,500 00	30,820 00	23,050 00
1.50	do 258,.....	66,921 00	56,235 00	21,520 00	36,460 00	19,775 00
1.56	do 259,.....	53,824 00	41,394 00	12,000 00	20,120 00	21,274 00
1.00	do 260,.....	35,085 00	31,695 00	14,340 00	21,320 00	10,375 00
1.02	do 261,.....	27,137 00	19,850 00	7,640 00	10,160 00	9,690 00
1.08	do 262,.....	31,287 00	21,748 00	7,280 00	13,280 00	8,468 00
1.41	do 264,.....	55,305 00	47,465 00	10,540 00	13,520 00	33,945 00
1.10	do 266,.....	37,519 00	36,600 00	12,800 00	33,400 00	3,200 00
0.88	do 267,.....	41,803 00	33,700 00	5,320 00	28,680 00	5,020 00

1.	.....	do	268,.....	33,442 00	26,655 00	5,960 00	24,680 00	1,975 00
0.98	.....	do	269,.....	30,605 00	31,592 00	8,080 00	22,180 00	9,412 00
1.08	.....	do	270,.....	32,593 00	37,233 00	8,260 00	20,160 00	17,073 00
0.95	.....	do	271,.....	26,005 00	22,939 00	6,200 00	16,520 00	6,419 00
1.	.....	do	272,.....	27,878 00	30,253 00	5,640 00	18,720 00	11,533 00
1.	.....	do	273,.....	35,866 00	36,058 00	10,960 00	27,310 00	8,718 00
0.75	.....	do	274,.....	21,005 00	15,920 00	5,500 00	13,140 00	2,780 00
1.50	.....	do	275,	50,749 00	45,809 00	12,960 00	35,760 00	10,049 00
3		Culverts on secs. No. 249, 254 and 255,.....		11,008 00	18,344 00	14,140 00	16,880 00	1,464 00
8		Culverts on secs. No. 257 to 262 inclusive,.....		11,553 00	13,500 00	8,020 00	13,020 00	480 00
.....		Irondequoit creek culvert, on sec. No. 256,.....		24,356 00	17,986 00	5,920 00	5,920 00	12,066 00
.....		Waste weir on secs. No. 245 to 262 inclusive,.....		4,400 00	6,252 00	2,720 00	2,720 00	3,532 00
.....		Waste weir on section 264, ..		7,180 00	4,511 00	.....	.....	4,511 00
1		Lock No. 65,		27,518 00	24,905 00	21,160 00	22,800 00	2,105 00
1		do 66,		27,480 00	26,784 00	18,940 00	23,840 00	2,944 00
2		Valve gates for locks No. 65, 66		1,412 00	832 00	.....	.....	832 00
5		Bridge abutments on secs. No 245 to 252 inclusive,.....		8,458 00	8,441 00	340 00	500 00	7,941 00
15		Bridge abutments on secs. No. 253 to 262 inclusive,.....		23,713 00	23,162 00	12,280 00	12,620 00	10,542 00
4		Bridge abut's on sec. No. 264,		8,601 15	7,778 00	5,040 00	5,040 00	2,738 00
6		Bridge abut's on secs. No. 266, to 270 inclusive,.....		14,781 00	14,725 00	9,740 00	14,640 00	85 00

No. 3—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1846.	Whole amount of work done.	Amount remaining to be done.
1.59	7	Bridge abutments on sections No. 271 to 275, inclusive,	\$9,881 00	\$13,773 00	\$3,540 00	\$10,600 00	\$3,173 00
	15	Timber bridge superstructures on secs. No. 245 to 262, inc.,	11,727 00	6,575 00	3,380 00	3,380 00	3,195 00
	11	Timber bridge superstructures on secs. No. 263 to 275, inc.,	10,010 00	6,616 00	3,400 00	5,960 00	656 00
	5	Iron bridge superstructures on secs. 252, 255, 258, & 262,	12,242 00	9,166 00	.....	.....	9,166 00
	6	Iron bridge superstructures on secs. No. 264, 266, & 275,	20,689 00	18,184 00	5,540 00	5,540 00	12,644 00
	.....	Section No. 265,	45,564 00	31,293 34	30,893 34	31,293 34	Completed.
	8	Culverts on secs. No. 266 to 275, inclusive,	17,418 00	21,348 85	7,468 85	21,348 85	do
	1	Iron bridge superstructure for Monroe-st., Rochester,.	3,568 60	3,591 37	691 37	3,591 37	do
.....	.....	Total,	\$1,413,895 75	\$1,285,881 56	\$535,193 56	\$885,673 56	\$400,208 00

No. 3—(CONTINUED.)

Third Subdivision.

Length in miles.	No. of structures	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1856.	Total amount done.	Amount remaining to be done.
1.05	Section No. 276,.....	\$14,475 00	\$41,780 00	\$15,500 00	\$40,900 00	\$880 00
.79	do 277,.....	33,510 00	29,320 00	17,960 00	28,240 00	1,080 00
.94	do 278,.....	34,877 00	31,440 00	13,900 00	32,580 00	1,860 00
.96	do 279,.....	37,700 00	33,020 00	14,080 00	29,520 00	3,500 00
.95	do 280,.....	41,863 00	22,790 00	7,200 00	18,000 00	4,790 00
1.13	do 281,.....	45,155 00	37,160 00	24,760 00	30,700 00	6,460 00
.78	do 282,.....	28,065 00	14,860 00	3,800 00	8,460 00	6,400 00
.50	do 283,.....	20,260 00	9,570 00	4,540 00	7,760 00	1,810 00
.85	do 284,.....	34,566 00	25,820 00	9,700 00	11,320 00	14,500 00
1.00	do 285,.....	39,880 00	32,280 00	12,700 00	24,420 00	7,860 00
1.13	do 286,.....	37,780 00	34,010 00	14,400 00	26,460 00	7,550 00
.79	do 287,.....	29,410 00	31,500 00	11,660 00	21,860 00	9,640 00
1.29	do 289,.....	111,650 00	100,740 00	32,400 00	50,340 00	50,400 00
1.02	do 290,.....	45,920 00	36,300 00	12,440 00	33,100 00	3,200 00
1.00	do 291,.....	40,180 00	43,050 00	19,060 00	35,620 00	7,430 00
1.00	do 292,.....	39,020 00	44,720 00	17,160 00	36,640 00	8,080 00
1.05	do 293,.....	37,130 00	28,980 00	11,880 00	26,340 00	2,640 00
1.00	do 294,.....	41,560 00	33,210 00	18,440 00	24,300 00	8,910 00
1.00	do 295,.....	39,950 00	29,200 00	12,560 00	27,200 00	2,000 00
1.00	do 296,.....	36,350 00	36,740 00	22,520 00	33,140 00	3,600 00
.88	do 297,.....	32,325 00	23,710 00	7,920 00	17,020 00	6,690 00

No. 3.—(CONTINUED.)

Length in miles.	No. of tructar's	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1856.	Total amount done.	Amount remaining to be done.
.88	Section No. 298,.....	\$33,035 00	\$26,920 00	\$9,800 00	\$22,720 00	\$4,200 00
.90	do 310,.....	14,060 00	24,180 00	7,510 00	16,080 00	8,100 00
1.13	do 311,.....	33,080 00	35,600 00	11,560 00	27,600 00	8,000 00
1.00	do 312,.....	33,750 00	26,560 00	7,240 00	16,760 00	9,800 00
1.09	do 313,.....	49,957 00	43,410 00	15,300 00	33,960 00	9,450 00
1.09	do 314,.....	36,250 00	40,300 00	8,840 00	26,500 00	13,800 00
1.10	do 315,.....	42,110 00	29,738 00	11,440 00	18,200 00	11,538 00
.95	do 316,.....	32,545 00	34,982 00	9,600 00	24,600 00	10,382 00
.95	do 317,.....	32,011 00	28,740 00	7,500 00	19,820 00	8,920 00
1.13	do 318,.....	46,791 00	38,020 00	13,840 00	32,520 00	5,500 00
1.00	do 319,.....	46,110 00	39,745 00	13,080 00	36,200 00	3,545 00
.56	do 320,.....	45,581 00	29,353 00	14,300 00	21,140 00	8,213 00
1.42	do 322,.....	50,030 00	34,464 00	9,120 00	23,840 00	10,624 00
1.09	do 323,.....	39,150 00	39,242 00	16,200 00	32,520 00	6,722 00
.92	do 324,.....	36,015 00	33,006 00	12,480 00	20,620 00	12,386 00
.93	do 325,.....	35,300 00	31,390 00	8,400 00	25,260 00	6,130 00
1.00	do 326,.....	46,760 00	37,322 00	17,460 00	23,680 00	13,642 00
1.00	do 327,.....	37,545 00	35,752 00	13,680 00	25,800 00	9,952 00
1.07	do 328,.....	43,785 00	44,822 00	16,340 00	32,800 00	12,022 00
1.03	do 329,.....	48,490 00	39,552 00	16,640 00	36,240 00	3,312 00
.05	Medina aqueduct section,....	4,206 00	9,203 00	.....	9,203 00	Completed.

10	Culverts on sections Nos. 276 to 283, inclusive,	30,629 00	33,080 00	12,320 00	28,200 00	4,880 00
4	Culverts on sections Nos. 284 and 289,	36,429 00	31,338 64	9,518 00	31,338 64	Completed.
15	Culverts on sections Nos. 285 to 298, inclusive,	39,865 00	36,540 00	13,840 00	34,080 00	2,460 00
1	Arch culvert on section No. 306,	5,877 00	10,160 00	947 00	8,760 00	1,400 00
11	Culverts on sections Nos. 310 to 315, inclusive,	27,305 00	27,635 00	7,380 00	26,280 00	1,355 00
8	Culverts on sections Nos 316 to 320, inclusive,	27,088 00	38,112 00	16,000 00	33,740 00	4,372 00
13	Culverts on sections Nos. 322 to 329, inclusive,	39,543 00	53,800 00	18,560 00	52,600 00	1,200 00
7	Bridge abutments on sections No. 276 to 283, inclusive, .	17,584 00	15,540 00	4,200 00	15,240 00	300 00
2	Bridge abutments on sections No. 284 and 310,	1,823 00	1,423 00	.....	120 00	1,303 00
1	Bridge abutment on section No. 289,	5,020 00	6,920 00	6,020 00	6,020 00	900 00
15	Bridge abutments on sections Nos. 285 to 298, inclusive,	37,650 00	27,580 00	8,800 00	18,620 00	8,960 00
6	Bridge abutments on sections Nos. 311 to 315, inclusive, .	15,100 00	12,600 00	2,940 00	2,940 00	9,660 00
14	Bridge abutments on sections Nos. 316 to 329, inclusive,	36,168 00	39,060 00	15,700 00	38,760 00	300 00

No. 3.—(CONTINUED.)

Length in miles.	No. of structures	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1856.	Whole amount of work done.	Amount remaining to be done.
	1	Bridge abut's and superstructure at Middleport, per act, chap. 29, Laws of 1856,...	\$3,275 00	\$1,937 00	\$820 00	\$820 00	\$1,117 00
	19	Timber superstruct's on secs. Nos. 276 to 298, inclusive,	16,603 00	11,008 00	9,140 00	9,140 00	1,868 00
	16	Timber superstruct's on secs. 311 to 329, inclusive,....	15,475 00	9,762 00	7,040 00	7,040 00	2,722 00
	4	Iron bridge superstructures on secs. Nos. 278 to 298, inc.,.	13,336 00	9,988 00	1,880 00	1,880 00	8,108 00
	5	Iron bridge superstructures on secs. Nos. 310 to 326, inc.,	16,627 00	13,046 00	9,280 00	9,280 00	3,766 00
	1	Waste weir on sec. No. 284,..	2,952 00	2,387 03	.....	.....	2,387 03
	1	do 289,..	2,233 00	4,140 00	4,060 00	4,060 00	80 00
	1	do 313,..	1,246 00	1,754 00	683 00	1,754 00	Completed.
	1	Waste gate on sec. No. 313,.	1,227 00	1,078 04	.....	.....	1,078 04
	1	do 327,.	1,247 00	1,192 24	.....	.....	1,192 24
	1	Stop gate on sec. No. 318,...	7,000 00	5,280 00	.....	.....	5,280 00
40.40	158	Totals,.....	\$2,039,489 00	\$1,820,861 95	\$694,188 64	\$1,420,655 64	\$400,206 31

No. 3.—(CONTINUED.)—*Fourth Subdivision.*

Length in miles.	No. of structures	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Am't done in 1856.	Whole amount of work done.	Amount remaining to be done.
1.	Section No. 330,.....	\$63,340 00	\$44,255 00	\$19,680 00	\$31,400 00	\$12,855 00
1.	do 331,.....	42,200 00	45,455 00	16,340 00	34,360 00	11,095 00
1.	do 332,.....	42,050 00	43,765 00	11,460 00	28,440 00	15,325 00
1.	do 333,.....	57,510 00	49,615 00	15,800 00	39,480 00	10,135 00
1.15	do 334,.....	65,960 00	42,366 00	18,500 00	36,760 00	5,606 00
0.85	do 335,.....	38,870 00	22,524 00	3,420 00	13,460 00	9,064 00
0.75	do 336,.....	29,820 00	25,430 00	8,260 00	18,920 00	6,510 00
0.50	Sec. No. 11, Mountain ridge,.	29,095 00	18,860 00	.....	.....	18,860 00
11.72	Secs. 348 to 359 inclusive,...	32,575 00	21,422 00	.....	.....	21,422 00
1.	Section No. 360,.....	70,010 00	63,528 00	12,000 00	45,580 00	17,948 00
1.	do 361,.....	99,970 00	69,395 00	15,980 00	38,700 00	30,695 00
1.	do 362,.....	85,560 00	65,410 00	19,060 00	36,060 00	29,350 00
1.	do 363,.....	49,290 00	41,580 00	740 00	18,740 00	22,840 00
1.	do 364,.....	48,950 00	40,200 00	8,220 00	19,780 00	20,420 00
1.	do 365,.....	52,840 00	40,510 00	5,480 00	21,920 00	18,590 00
1.	do 366,.....	78,550 00	54,020 00	8,840 00	32,760 00	21,260 00
0.94	do 367,.....	59,850 00	47,587 68	19,867 68	47,587 68	.....
0.91	do 368,.....	13,975 00	8,500 00	5,020 00	5,020 00	3,480 00
0.85	do 369,.....	58,850 00	65,000 00	37,480 00	38,000 00	27,000 00
0.54	do 370,.....	32,625 00	17,016 00	5,300 00	5,300 00	11,716 00
1.63	Secs. 1 and 2, city of Buffalo,	42,650 00	40,450 00	3,980 00	3,980 00	36,470 00
Totals,.....			\$1,094,540 00	\$866,888 68	\$235,427 68	\$516,247 68	\$350,641 00

No. 3—(CONTINUED.)

Length in miles.	No. of structure's	Character of work.	Engineer's estimate.	Estimated cost at contract prices.	Amount done in 1856.	Whole amount of work done.	Amount remaining to be done.
	9	Culverts on sections No. 330 to 336, inclusive,	\$26,383 00	\$30,542 00	\$10,440 00	\$26,200 00	\$4,342 00
	1	Culvert on section 362,	2,984 00	3,976 08	3,136 08	3,976 08	.....
	1	Waste wier on section 330, ..	2,441 00	2,259 29	2,039 29	2,259 29	.....
	1	Waste wier on section 360, ..	1,925 00	2,175 00	160 00	160 00	2,015 00
	1	Guard lock at Black Rock, ..	76,946 00	65,570 00	10,540 00	48,600 00	16,970 00
	2	Valves for guard lock,	1,412 00	940 00	.....	.....	940 00
	8	Bridge abutments on sections 330 to 336, inclusive,	18,737 00	13,316 50	7,800 00	12,120 00	1,196 50
	6	Bridge abutments on section 360, to guard lock,	9,376 00	16,150 00	9,400 00	15,100 00	1,050 00
	1	Abutments for change bridge section 2, city of Buffalo, ..	3,082 00	2,873 00	.....	.....	2,873 00
	5	Timber bridge superstruct'rs, section 330 to 335, inclusive,	6,240 00	3,740 00	860 00	860 00	2,880 00
	4	Timber bridge superstruct'rs, sections 360 to guard lock,	3,665 00	2,111 00	1,560 00	1,560 00	551 00
	4	Timber bridge superstruct'rs, sec's 1 and 2, city of Buffalo,	2,985 00	2,689 00	.....	.....	2,689 00
	3	Iron bridge superstructures, sections 334 and 336,	8,780 00	6,698 00	6,600 00	6,600 00	98 20
	1	Iron change bridge, sec. 361, ..	2,925 00	1,633 00	1,440 00	1,440 00	193 00

2	Iron bridge superstructures on sec's 7 and 8, Mount'n ridge,	5,949 00	5,582 20	5,580 00	5,580 00	2 20
1	Iron bridge superstructure at Amherst-st, Buffalo,	3,200 00	3,096 90	.....	3,096 90	Completed.
1	Bridge abutments at Ferry-st., Buffalo,	2,566 00	2,057 20	.....	2,057 20	do
1	Iron bridge superstructure at Ferry-st., Buffalo,	3,800 00	2,100 00	.....	2,100 00	do
1	Bridge abutment, Genesee-st, Buffalo,	5,378 75	3,970 69	.....	3,970 69	do
1	Iron bridge superstructure, Genesee-st., Buffalo,	7,000 00	7,602 56	.....	7,602 56	do
1	Bridge abutments, Perry-st., Buffalo,	4,000 00	4,225 09	.....	4,255 09	do
1	Iron bridge superstructure, Perry-st., Buffalo,	2,800 00	2,485 00	.....	2,485 00	do
.....	Totals,	\$1,297,114 75	\$1,052,711 39	\$294,983 05	\$666,270 49	\$386,440 90

No. 3.—(CONTINUED.)
Genesee Valley Canal.

Length in miles.	No. of structures	Character of work.	Engineer's estimate	Estimated cost at contract prices.	Amount done in 1856.	Whole amount of work done.	Work remaining to be done.
2.97	.....	Sections No. 82, 83, 84,	\$12,000 00	\$20,093 07	\$9,153 07	\$20,093 07	.....
1.07	.....	do 91 and feeder, ..	20,000 00	14,399 19	919 19	14,399 19	.....
2.05	.....	do 95 and 96,	15,700 00	12,886 39	.....	12,886 39	Completed.
1.04	.....	do 97,	14,300 00	12,467 55	1,907 55	12,467 55	do
1.02	.....	do 98 and feeder, ..	17,000 00	15,622 75	4,622,75	15,622 75	do
0.98	.....	do 107 & 2 bridges,	14,600 00	12,512 00	1,800 00	1,800 00	\$10,772 00
2.91	.....	Ischua feeder,	31,000 00	37,600 00	13,560 00	37,220 00	380 00
	1	Ischua aqueduct,	4,400 00	5,082 66	.....	5,082 66	Completed.
		Oil Creek reservoir,	60,000 00	45,796 00	24,560 00	34,900 00	10,896 00
	1	Culvert on section 10,	1,600 00	1,655 80	260 00	380 00	1,275 80
	1	do '65,	350 00	838 86	.....	838 86	Completed.
	1	Lock No. 105, inclu'g valves,	11,700 00	9,744 50	.....	.....	9,744 50
	1	do 106, do	16,700 00	13,475 00	740 00	740 00	12,735 00
	3	Lock-houses at locks No. 11, 60 and 61,	1,200 00	1,080 00	160 00	160 00	920 00
	5	Lock-houses at locks No. 77, 89, 97, 98, and 104,	2,000 00	2,238 65	.....	2,238 65	Completed.
	33	Valve gates for locks No 72, to 104, inclusive,	6,600 00	6,582 12	862 12	6,582 12	do
.....	.....	Total,	\$229,150 00	\$212,134 54	\$58,544 68	\$165,411 24	\$46,723 30

STATEMENT No. 4.

Work not under contract.

Showing the length in miles, number of structures, character of work, and estimated cost of work not under contract, to complete the Western Division of the Enlargement of the Erie canal.

FIRST SUBDIVISION.

None.

SECOND SUBDIVISION.

No. of structures.		Estimated cost.
1	Raising banks of Genesee river feeder, and extending Genesee river feeder dam,..	\$3,000 00
<hr/> 1 <hr/>		<hr/> \$3,000 00 <hr/>

THIRD SUBDIVISION.

None.

FOURTH SUBDIVISION.

No. of structures.	Length in miles.	Character of work.	Estimated cost.
	0.90	Section No. 337,.....	\$11,415 00
	11.58	Raising and repairing tow path at Tonawanda creek, secs. No. 348 to 359 inclusive,	50,245 00
1		Weigh lock at Black Rock, scales and house,.....	39,945 00
<hr/> 1 <hr/>			<hr/> \$131,605 00 <hr/>

STATEMENT No. 5.
Repairs of Erie Canal—Third Subdivision.

Length in miles.	No. of structures	Character of work.	Estimate at contract prices.	Am't done in 1856.	Whole amount of work done.	Amount remaining to be done.
0.94	Improvement of old canal through the village of Holley,	\$5,577 00	.....	.....	\$5,577 00
0.94			\$5,577 00	.....	.....	\$5,577 00

Fourth Subdivision.

1	Enlargement of State ditch culvert, sec. 360,	\$14,143 72	\$13,854 72	\$14,143 72	.....
1	do Cornelius creek do sec. 367,	10,559 00	9,573 00	10,559 00	.....
1	Iron change bridge, sec. 367,.....	2,167 00	2,167 00	2,167 00	.....
1	Timb. b'ge super're, sec. 4, Mountain ridge,	846 81	846 81	846 81	.....
	Enlargement of Scajaquady creek ditch,...	4,982 00	2,516 00	2,516 00	\$2,466 00
1	Bridge abutments, Seymour-st., Tonawanda,	2,147 55	.....	.....	2,147 55
1	Iron b'ge super're, do do	1,710 00	.....	.....	1,710 00
1	Iron swing bridge over slip connecting Ohio basin with Buffalo harbor,.....	3,600 00	795 00	3,600 00	.....
		\$40,156 08	\$29,752 53	\$33,832 53	\$6,323 55

STATEMENT No. 6.

Showing the probable condition of the Western division of the enlargement of the Erie canal, on the opening of navigation in the spring of 1857, if the means now assigned to it by the Canal Board, shall be expended in prosecuting the work.

FIRST SUBDIVISION.

Kind and condition of canal.	Width		Length in		Total.
	on bottom in feet.	miles with 5 ft. water.	miles with 7 ft. water.		
From Wayne county line to Pit lock; old canal improved,.....	35	1.15	....	1.15	
From Pit lock to Clyde—enlarged canal compl'd except berme walls,	52½	....	4.43	4.43	
From Clyde to Lyons—enlarged ca- nal completed,.....	52½	....	7.86	7.86	
From Lyons to west end of sec. 227 —enlarged canal completed upon plan of enlargement—previous to 1851,.....	42	....	2.77	2.77	
From sec. No. 227 to sec. No. 230— enlarged canal completed except berme walls,.....	52½	....	2.09	2.09	
Sec. 230—enlarged canal completed mostly upon plan of enlargement previous to 1851,.....	42	....	0.59	0.59	
Sec. No. 231—through Newark, en- larged canal completed,.....	52½	....	0.73	0.73	
From sec. No. 231 to sec. No. 240— enlarged canal completed, except berme walls,.....	52½	....	7.97	7.97	
Sec. No. 240 through Palmyra, en- larged canal completed;.....	52½	....	0 50	0.50	
From sec. No. 240 to west end of sec. No. 244, (near Macedon,) enlarged canal compl't'd except berme walls,	52½	....	3.30	3.30	
Total miles,.....		1.15	30.24	31.39	

NOTE.—The above is the length of canal as it will be next season; but when the enlarged canal is fully completed the length will be 31.93 miles.

Kind and condition of canal.

Width Length in Length in
on bottom miles with miles with Total.
in feet. 5 ft. water. 7 ft. water.

SECOND SUBDIVISION.

From east end of sec. 245 to Irondequoit culvert, on sec. 256, enlarged canal completed except berme walls,	52½	....	12.99	12.99
From Irondequoit culvert to west end of Irondequoit embankment, old canal improved,	35	0.30	....	0.30
From west end of Irondequoit embankment to railroad bridge on sec. No. 257—enlarged,	52½	....	0.86	0.86
From railroad bridge to lock No. 65, (2 miles west of Pittsford,)—old canal improved,	35	4.15	....	4.15
From lock No. 65 to Brighton—enlarged canal completed, except berme walls,	52½	....	3.26	3.26
From Brighton to east end of sec. No. 264—enlarged canal completed, except a small amount of rock excavation and berme wall near lock No. 69,	52½	....	1.65	1.65
From east end of sec. 264 to Rochester aqueduct—enlarged canal completed, except part of bottom excavation on berme side and berme walls,	40	....	1.41	1.41
From Rochester aqueduct to east end of sec. No. 266—enlarged canal completed,	52½	....	1.59	1.59
From east end of sec. No. 266 to west end of sec. No. 275 at Spencerport—enlarged canal nearly completed, except berme walls, ..	55	....	10.21	10.21
Total miles,		<u>4.45</u>	<u>31.97</u>	<u>36.42</u>

Kind and condition of canal.

Width Length in Length in
on bottom miles with miles with Total.
in feet. 5 ft. water. 7 ft. water.

THIRD SUB-DIVISION.

From east end of sec. No. 276 at Spencerport, to east end of high embankment at Holley, on sec. No. 289, enlarged canal completed except bottom excavation on berme side and berme walls,.....	43	....	4.95	4.95
A portion of the above distance, enlarged canal completed, except berme walls,.....	60	....	9.55	9.55
From east end of high embankment at Holley to west end of same, old canal improved,.....	35	....	0.93	0.93
From west end of high embankment at Holley to west end of sec. No. 329 at Reynale's basin—enlarged canal completed, except bottom excavation on berme side and berme walls,	43	....	8.20	8.20
A portion of the above distance—enlarged canal completed, except berme walls,	52½	....	18.32	18.32
Total miles,.....			<u>41.49</u>	<u>41.95</u>

FOURTH SUB-DIVISION.

From east end of sec. No 330 to east end of sec. No 337, (at Lockport,) enlarged canal partially completed	40	....	5.75	5.75
A portion of the above distance enlarged canal completed,.....	78	....	1.	1.
Sec. No. 337 enlarged previous to suspension in 1842,.....	66	....	0.90	0.90
From foot of lock at Lockport to west end of sec. No. 5, Mountain Ridge—enlarged canal completed,	62	....	2.66	2.66

Kind and condition of canal.	Width	Length in	Length in	Total.
	on bottom in feet.	miles with 5 ft. water.	miles with 7 ft. water.	
From east end of sec. No. 6—Mountain Ridge to east end of sec. No. 12 Mountain Ridge—old canal improved,.....	40	2.50	....	2.50
From east end of sec. No. 12 Mountain Ridge to Tonawanda creek at Pendleton—enlarged canal completed,	90	....	1.50	1.50
From Pendleton to Tonawanda, creek used for canal as heretofore, with 7 feet depth of water, except on bars, upon which there is generally about 6 feet depth,.....			11.58	11.58
From Tonawanda to Buffalo—enlarged canal partially completed, 40	40	....	12.71	12.71
Total miles,.....		<u>2.50</u>	<u>36.10</u>	<u>38.60</u>

STATEMENT NO. 7.

Approximate estimate, of the probable amount of money required to be expended between the 1st of May and the 1st of December, 1857, in delivering materials for berme walls, and in prosecuting work that may be done during the season of navigation—Western division enlargement of the Erie canal:

FIRST SUB-DIVISION.

Length in miles.	No. of structure.	Character of work.	Amount.
1.69	Section No. 207,.....	\$40,000 00
1.18	208,.....	3,924 00
1.17	209,.....	2,352 00
1.09	210,.....	2,255 00
1.09	211,.....	2,945 00
1.03	228,.....	2,330 00
1.06	229,.....	1,953 00
1.05	232,.....	2,634 00
1.06	233,.....	2,711 00
0.94	234,.....	2,346 00

Length in miles.	No. of structure.	Character of work.	Amount.
0.91	Section No. 235,	\$2,000 00
1.01	236,	1,680 00
0.99	237,	1,280 00
0.99	238,	2,500 00
1.03	241,	2,250 00
0.86	242,	2,150 00
0.89	243,	1,940 00
0.52	244,	880 00
Total,			<u>\$77,500 00</u>

SECOND SUB-DIVISION.

1.43	....	245,	\$300 00
1.	....	246,	1,490 00
1.	....	247,	1,320 00
1.13	....	248,	3,260 00
1.12	....	249,	4,540 00
1.13	....	250,	1,540 00
1.12	....	251,	800 00
1.14	....	252,	1,820 00
1.25	....	253,	990 00
1.	....	254,	440 00
1.	....	255,	1,650 00
1.19	....	256, Irondequoit emb...	10,000 00
1.16	....	257, near Pittsford,	5,280 00
1.50	....	258, at do	2,710 00
1.56	....	259, near do	13,000 00
1.	....	260,	1,150 00
1.02	....	261,	1,650 00
1.08	....	262,	1,050 00
1.41	....	264,	1,400 00
0.98	....	269,	650 00
1.08	....	270,	2,160 00
0.95	...	271,	1,125 00
1.	....	272,	1,080 00
1.	....	273,	1,215 00
0.75	....	274,	400 00

Length in miles.	No. of structure.	Character of work.	Amount.
1.50	....	Section No. 275,.....	\$925 00
....	1	Irondequoit creek culvert, sec. 256.	10,000 00
....	5	Bridge abutments sec. 245 to 252 inc.	3,000 00
....	15	do do 253 to 262 inc.	4,000 00
....	15	Timber bridge super. 245 to 262 inc.	1,000 00
....	5	Iron do 245 to 262 inc.	3,000 00
			<hr/>
			\$82,945 00
			<hr/>

THIRD SUB-DIVISION.

0.79	....	Section No. 277,.....	\$200 00
0.94	....	278,.....	400 00
0.95	....	280,.....	1,180 00
1.13	....	281,.....	940 00
0.78	....	282,.....	1,200 00
0.85	....	284,.....	2,800 00
1.	...	285,.....	1,760 00
1.13	....	286,.....	1,480 00
0.79	....	287,.....	2,000 00
1.29	....	289, At Holley,.....	20,000 00
1.02	....	290,.....	600 00
1.	....	291,.....	1,900 00
1.	....	292,.....	800 00
1.05	....	293,.....	
1.	....	294,.....	2,000 00
1.	....	295,.....	
1.	....	296,.....	600 00
0.88	....	297,.....	1,200 00
0.88	....	298,.....	900 00
0.90	....	310,.....	200 00
1.13	....	311,.....	150 00
1.	....	312,.....	300 00
1.09	....	313,.....	500 00
1.09	....	314,.....	400 00
1.10	....	315,.....	100 00
0.95	....	316,.....	300 00
0.95	....	317,.....	400 00

Length in miles.	No. of structure.	Character of work.	Amount.
1.13	Section No. 318,.....	\$800 00
0.56	320,.....	250 00
1.42	322,.....	500 00
0.92	324,.....	200 00
0.93	325,.....	300 00
1.	326,.....	400 00
1.	327,.....	250 00
1.07	328,.....	300 00
1.03	329,.....	200 00
Total,.....			<u>\$45,510 00</u>

FOURTH SUB-DIVISION.

1.	....	330,.....	\$2,800 00
1.	....	331,.....	700 00
1.	....	332,.....	2,800 00
1.	....	333,.....	1,700 00
1.15	....	334,.....	1,800 00
0.85	....	335,.....	2,400 00
0.82	....	336,.....	2,500 00
0.50	....	6, Mountain ridge,....	15,000 00
0.50	....	7, do do	13,000 00
0.50	....	8, do do	8,000 00
0.50	....	9, do do	11,000 00
0.50	....	10, do do	1,000 00
0.50	....	11, do do	1,000 00
1.	....	360, Tonawanda creek,	3,000 00
1.	....	361, do do	9,000 00
1.	....	362, do do	10,000 00
1.	....	363, do do	5,000 00
1.	....	364, do do	3,500 00
1.	....	365, do do	3,000 00
1.	....	366, do do	5,000 00
0.89	....	368, do do	3,500 00
0.85	....	369, do do	11,500 00
0.54	....	370, do do	500 00

Length in miles.	No. of structure.	Character of work.	Amount.
1.63	....	Section No. 1 & 2, city of Buffalo,..	\$10,000 00
....	1	Erie basin and slip, do do ..	15,580 00
....	4	Timber bridge superstructures, on sections 1 and 2 city of Buffalo,	700 00
....	1	Bridge abutments and pier, for change bridge, on sec. 2, city of Buffalo,	700 00
			<hr/>
			\$144,680 00
			<hr/>

Summary.

First sub-division,.....	\$77,500 00
Second, do	82,945 00
Third, do	45,510 00
Fourth, do	144,680 00
<hr/>	
Total,.....	\$350,635 00
<hr/>	

LAND DEPARTMENT.

REPORT OF B. S. VAN RENSSELAER, CLERK IN CHARGE, 1856.

Albany, January 15th, 1857.

To the HON. SILAS SEYMOUR,

State Engineer and Surveyor:

SIR—In compliance with your instructions, and to give a correct view of the matters relating to the Land Department, and enable the State Engineer and Surveyor to judge more correctly where the interest of the State may seem to require some additional legislative provision, I herewith submit the following

REPORT.

The annexed statements, A. and B., show the lands sold during the fiscal year 1856; also the lands now belonging to the State, and do not include a portion of the lands bid in for taxes by the Comptroller at the sale of 1853, and not yet released by him to the State. (See statements A. and B.)

It is proper here to observe, that all the tax certificates purchased in the name of the people at the county tax sales of 1852, 1853-4, have been sold under the provision of sec. 85, chap. 298, Laws of 1850, and being transferred these purchases cannot now accrue to the benefit of the State.

The number of patents issued by the Secretary of State, on certificates from the State Engineer and Surveyor, are 170, as follows, viz: during the year 1856,

Grants of land under water,.....	6 patents.
Salt lands,.....	27 do
Other lands,	137 do
Total,	<u>170</u>

Unless otherwise directed by the Legislature, the sales have been conducted in the following manner:

Whenever the Commissioners of the Land Office had reason to believe that any of the vacant lands would be sold if brought into market, they have been ordered to be surveyed into lots, and valuations were made of them by the surveyors or appraisers, from which the minimum prices were set on them. They were then advertised, and exposed for sale by auction, and those lots for which the minimum prices were not bid remained liable to be taken by the first applicants, on their paying the one fourth part of the prices set on them, and giving bonds for the residue, as required by law; and if any lots have remained for a considerable time unsold, it has been presumed that they were valued too high, and the Commissioners have, in such cases, ordered a re-appraisement to be made of them, and a re-exposure for sale by auction.

The Commissioners of the Land Office are authorized by act, ch. 11, Laws of 1814, to cause all lands purchased on behalf of the State by the Attorney General, to be sold in like manner, and on such terms and conditions as to them shall appear for the interest of the State, and the Loan Commissioners of the United States Deposit Fund are required in like manner to bid in land under foreclosure of mortgage, and the method adopted by the Commissioners of the Land Office, for the sale of such lands, has been to cause them to be appraised, and to direct the State Engineer and Surveyor to sell them by auction, after duly advertising the sale. If the appraisement be less than the amount due on the mortgage, on the foreclosure of which the land has been bought in for the State, such appraisement is made the minimum price, otherwise the amount, with addition of costs, is made the minimum price. If not sold at the Surveyor General's sales, the land remains for sale to applicants, as in the other cases stated; and if, after a length of time, no offers are made for the purchase of it, at the appraised value, the Commissioners of the Land Office exercise their discretion for the disposal of it in the best manner for the interest of the State.

By chapter 230, Laws of 1827, upon the application of any person for any unappropriated lands in the 4th Senate district, (counties of Saratoga, Montgomery, Hamilton, Washington, Warren, Clinton, Essex, Franklin, and St. Lawrence,) not less than 160 acres, the Commissioners of the Land Office may sell such lands, if already surveyed, at such price as they shall ascertain to be their cash value. And if application be made for any quantity of such land not less than 1,000 acres, not already surveyed, the Commissioners may cause surveys and estimates to be made and sell the same at their cash value as ascertained by them, and no lands so sold for five years after the sale, shall be assessed at any higher valuation than the estimate upon which they were sold. Under these provisions the Commissioners have made sales, on application, from time to time of the unimproved and unappropriated lands in the 4th Senate district, the great mass belonging to the School Fund.

In respect to the value of these lands: without an appraisement or personal examination of the tracts or townships, would be of little utility. Recent sales at twenty and thirty cents per acre are entitled to but little reliance as evidence of their real value, prices heretofore obtained can form no rule for calculating what may hereafter be obtained. It must be admitted that it is difficult to place an estimate upon them which could be relied upon independent of a test of a public sale. The bids which are made at public sale by persons who have explored and examined the lands for the purpose of determining what they should be willing to give for them, are after all the only test of their value and entitled to confidence.

A better system than that which is authorised and directed by the existing laws, and which is pursued in the manner above stated has not suggested itself.

The region composing the 4th Senate district, is known to abound with ores of iron, which constitute a considerable part of its value and must be a source of increasing wealth to the State, and when duly explored increase the resources of the country, and, therefore, the policy of the State heretofore not to have these lands forced to a sale. Under these circumstances

the lands of the State are only brought into market, from time to time, as there is a demand for them, viz: lumber, iron ores and other minerals.

Since the spirit of land speculation in this State has subsided, to dispose of our public lands by wholesale was not to be expected, until by act, chap. 207, Laws of 1848, and subsequent acts, chap. 72, of 1851, and chap. 122, Laws of 1855. The Commissioners of the Land Office are authorised and required to sell and convey to the Sacketts Harbor and Saratoga Railroad company 250,000 acres, belonging to the State, in the counties of Hamilton and Herkimer, at the rate of five cents per acre, on the company complying with the conditions named in said acts.

This claim has been satisfied in full, by lands granted in August, September and October, 1855, viz:

	No. of acres.	per acre.	Amount.
Hamilton and Essex counties,.....	205,202	5c.	\$10,260 11
And in July 23, 1856—			
Hamilton county,.....	20,000	5	1,000 00
do and Warren county,....	6,984	30	2,095 20
Warren county,.....	15,974	30	4,792 20
do and Essex county,.....	7,042	30	2,112 60
Total,.....	255,202		\$20,260 11

As will appear from the following extracts from the minutes of the Land Office, on the 9th July, 1856, the Sacketts Harbor and Saratoga Railroad Company, by their president, Mr. Wadell, made the following proposition:

“To the Commissioners of the Land Office:

“Gentlemen,—I propose for the Sacketts Harbor and Saratoga Railroad to take lands now owned by the State in Hamilton and Herkimer counties, in accordance with our chartered rights, 20,000 acres; the road having already received 205,000 acres, and claiming 25,000 acres adversely claimed by Dart, Kirby, Loomis and others, also propose to purchase 30,000 acres of lands belonging to the State, lying in other counties, and to pay for the same 30 cents per acre, under a stipulation from the road to be filed, that in case our suit for the disputed lands is decided

against the road, the number of acres now purchased shall go towards the amount due from the State, in which case the excess over 5 cents per acre to be refunded." Thereupon—

Resolved, that the proposition herewith submitted by the Sacketts Harbor and Saratoga Railroad Company be accepted, and that patents be issued upon the payment of 5 cents per acre into the State treasury for 20,000 acres of land lying in Hamilton and Herkimer counties, and not claimed adversely by other parties; and that the proposition to purchase from the State 30,000 acres lying in Warren and Essex counties additional, to pay therefor the sum of 30 cents per acre, be accepted, and that patents therefor issue upon the payment of 30 cents per acre, and the filing of a stipulation on the part of said company, that in case the suits for land, on the part of the company and defended by the State, shall be decided against the said company, the amount of their said purchase at 30 cents per acre shall go towards the amount found due from the State acre for acre, in which case, the excess over 5 cents per acre shall be refunded said company.

By article 7, section 7, of the present Constitution, adopted in 1846, "The Legislature shall never sell, or dispose of the salt springs belonging to this State. The lands contiguous thereto, and which may be necessary and convenient for the use of the salt springs, may be sold by authority of law, and under the direction of the Commissioners of the Land Office, for the purpose of investing the moneys arising therefrom in other lands alike convenient; but by such sale and purchase the aggregate quantity of these lands shall not be diminished."

Since the adoption of the present Constitution, 114.85 acres have been sold for \$153,039 50
Amount purchased 543.12 for (see statement C) 152,876 11

Under the statute passed April 11, 1848, it is the duty of bridge companies, incorporated under ch. 259, Laws of 1848, section 16, to report annually to the State Engineer and Surveyor, and the county clerk, where the papers are filed, under oath, the cost of their bridge. The amount of all moneys expended,

the amount of their capital stock, and how much paid in, and how much actually expended, the amount received during the year for tolls, and from all other sources, stating each separately, the amount of dividends made, and the amount of indebtedness of such company, specifying the object for which the indebtedness accrued, and file the same by the 1st day of February, in each year.

Reports have been received from 14 bridge companies; one of the corporations, which reported in 1854, has failed to make report 1855.

The following is a list of bridge companies, and the date of the filing of their annual reports in 1855, including one which has failed to report. (See statement D)

Table arranging the information contained in the reports of companies formed to navigate the lakes and rivers, as required by section 24, of chapter 232, Laws of 1854. (See statement E.)

I have considered it my duty to make known to you the necessity of republishing a new map of the State, in order that such measures may be taken respecting the subject presented by it as may be considered best for the interest of the State.

The atlas published by Mr. Burr in 1829, and republished by Messrs. Stone & Clark in 1839, was alike creditable to their authors for their industry, and was published by the State pursuant to an act of the Legislature, and compiled under the direction and superintendence of Simeon de Witt, then Surveyor General, from documents deposited in the public offices of the State, and elsewhere to be found, comprising all the surveys of the State up to that period, and gave a value and character to the work for usefulness.

The great changes and many years that have passed since its publication, the extension and lengthened lines of canals, railroads, and other interesting improvements which have been, since that period, finished, matured, or begun, or of probable ex-

ecution, will render it useful not only to science but acceptable to all intelligent citizens of the State, in order that we may understand the subjects connected with legislation.

In 1839 the State was divided into 58 counties and 823 towns. Up to the present time the civil divisions of the State consist of 60 counties and 919 towns, with 13 cities subdivided into wards.

Within a brief space of time, the population, wealth and resources of the State have increased unequalled by any State in the Union.

The maps heretofore published are valuable and meritorious, but the great improvements which have been made have rendered them almost useless.

The present surveys afford correct data for the delineation of the outlines of a correct map of the State, and a new map should embrace everything of general interest with the greatest possible degree of accuracy and to a general knowledge of the topography of the State. The expense of having it done will be but trifling compared with its utility, unless it should be deemed best to triangulate the State, when a map could be made worthy of the character and conceded pre-eminence of the Empire State.

Respectfully submitted,

B. S. VAN RENSSELAER.

(A.)

Statement of lands sold by the State Engineer and Surveyor, belonging to different funds, for the year 1856. (Fiscal year '55 and '56.

Acres.	Summary.	
	City lots, Salt Fund lands,	\$18,725 00
33,900.	General Fund lands,	8,786 29
12,633.	School Fund lands,	2,002 08
10,240.	Literature Fund lands,	832 00
<u>56,773.</u>		<u>\$30,345 37</u>

(B.)

Statement of the unsold lands belonging to the people of this State, specifying the tracts and counties, where situated, the number of acres and the funds to which they respectively belong, viz :

General Fund.

Counties.	Tracts.	Acres.
Clinton,	Duerville patent,	500
do	Old Military tr. to 5,	213
Cortland,	Township of Solon, lot 26,	212
Essex,	Essex tract or Henry's survey,	160
do	Iron ore tract,	360
do	Jay tract,	1,012
do	North river Head tract,	220
do	Old Military tr. to 1, Thorn's survey, . .	160
do	do 1, 2 Richard's su'ry,	234
do	do township 11,	1,394
do	Roaring brook tract,	350
do	Sprague's patent,	47
do	Totten & Crossfield's purchase, to 25, Thorn's survey,	700
do	West of Road patents,	474
Hamilton,	Arthurboro patent,	
do	E. part of S. $\frac{1}{2}$ Morehouse' 8,000 acre tr.	900
do	Benson township,	2,092
do	Bergen's purchase, patent No. 1,	200
do	do do 8,	54
do	do do 8 and 9,	514
do	Leffert's tract,	300
do	Lewis small tract,	100
do	Moose river tract, township 9,	375
do	Ox-bow tract,	448
do	Palmer's purchase, rear div'n, lot No. 24	200

Counties.	Tract.	Acres.
Hamilton.	Totten and Crossfield purchase, township 9, Elm lake tract,	250
Herkimer.	Jerseyfield patent,	100
do	Nobleborough patent, new survey,	600
do	Royal grant, 3d allotment,	80
Seneca.	Township of Ovid, lot 75, escheat,	175
Sullivan.	Minisink patent, 1st division, lot 11,	116
Warren.	Brant lake tract,	470
do	French mountain tract,	20
do	Hague tract,	160
do	Luzerne tract,	180
do	Palmer' purchase, rear division, E. end, remainder lot 2,	305
do	Great lot No. 1,	240
do	Riche's patent, b'd, &c., in town of Hague	60
do	Robertson's patent,	208
Washington..	South bay tract,	57

14,240

RECAPITULATION.

General Fund.

	Acres.
Clinton county,	713
Portland county,	212
Essex county,	5,111
Hamilton county,	5,433
Herkimer do	780
Seneca do	175
Sullivan do	116
Warren do	1,643
Washington do	57

14,240

SCHOOL FUND LANDS.

Counties.	Tracts.	Acres.
Essex,	Old Military tract, township No. 1, Thorn's survey,	458
do	Old Military tract, township No. 11, ..	360
do	do do township No. 12, Richards' survey,	627

Counties.	Tracts.	Acres.
Essex,.....	Old Military tract, township No. 12, Thorn's survey,.....	1,610
do	Jonas Morgan's patent of 4,800 acres, Lyman Smith's mortgage,.....	100
Clinton,....	Gore along Refugee tract,.....	1,680
Hamilton,..	Gore between Totten and Crossfield, Moose river and Ox-Bow tracts,.....	2,516
Herkimer,..	Freemason patent, forfeited land,.....	12
Washington,	Marsh lots in town of Putnam,.....	30
St. Lawrence,	Indian meadows, Grass river,	75
Oneida,....	Oneida purchase of June, 1842, lot 2,...	28
Onondaga,..	Reclaimed lots—Onondaga salt springs, Geddes' basin, lots 4 and 6,.....	5
Wayne,....	Township of Sterling, lot 40,.....	50
do	do Galen, lot 73, S. E. corner,	300
		<hr/> 6,401

*Lands which have become the property of the State by
foreclosure of mortgages.*

Counties.	Tracts.	
Columbia,..	City of Hudson, lot 50, by 150 feet, for- merly mortgaged by Charles Jenkins.	
Dutchess, ..	Town of Poughkeepsie, formerly mort- gaged by S. Record,.....	6
Fulton,....	Town of Johnstown, Kingsborough patent, formerly mortgaged by J. Wiley,.....	25
Montgomery,	Town of Minden, formerly mortgaged by P. Brooks,.....	16
Schoharie,..	Blenheim patent, formerly mortgaged by V. Efner (title doubtful),.....	105
		<hr/> 6,553

RECAPITULATION.

School Fund.

County.	Acres.
Clinton,.....	1,680
Dutchess,	6
Essex,.....	1,705
Fulton,.....	25

Counties.	Acres.
Hamilton,.....	2,516
Herkimer,.....	12
Montgomery,.....	16
Oneida,.....	28
Onondaga,.....	5
St. Lawrence,.....	75
Schoharie,.....	105
Washington,.....	30
Wayne,.....	350
	<hr/>
	6,553
	<hr/>

SALT FUND LANDS.

Salt Spring Reservation, Onondaga County.

Reclaimed lot No. 4, containing	8 acres.
do 5, do	10
do 6, do	5
do 7, do	5
do 17, do	13
do 18, do	14
do 19, do	12
do 20, do	4
do 21, do	8
do 22, do	7
do 23, do	6
do 24, do	6
do 25, do	6
do 26, do	6
do 27, do	8
do 28, do	6
do 29, do	10
do 30, do	5
do 35, do	5
do 39, do	7
do 41, do	19
do 42, do	19
do 43, do	20

Ge des Basin, Lots Nos. 2, 3 and 5.

Also 13 city lots on Genesee street, west of Plum street, in Syracuse.

Remaining reserved lands leased for salt purposes, (see appendix F., in Senate Journal, of 1829, page 52.) Also all the lands purchased since the adoption of the Constitution, in 1846.

LITERATURE FUND. .

Benson township, Hamilton county, 640 acres.

General Summary.

Arranged according to the respective funds to which they belong.

<i>Funds.</i>	<i>Acres unsold</i>
General Fund,	14,240
School Fund,	6,553
Salt Fund,	209
Literature Fund,	640
Total,	21,642

NOTE.—The General Fund statement does not include the lands bid in at the tax sale of 1853, and not conveyed by the Comptroller to the State; except as to the counties of Essex, Hamilton, Herkimer and Warren, which have been conveyed.

(C.)

Statement of the lands sold and moneys expended in the purchase of other lands, expenses, &c., in the Onondaga Salt Springs reservation, since the adoption of the present Constitution in 1846, viz :

Sales of Onondaga salt spring lands.

Feb. 20, 1849... Out lots containing 49 acres, also six blocks at Liverpool, five blocks in Salina, four blocks at Syracuse. Parts of farm lots 253, 301 and 324, together with three pieces or gores on which the Oswego railroad is located ; quantity in all cases not given, done pursuant to act, chap. 346, Laws of 1848.

	Acres.	Sold for
do	49	\$25,136 00
June 13, 1850.. Mill pond improvement in Syracuse, per chap. 12, Laws of 1849,	6	14,770 00
May 19, 1853.. Lands ly'g n'th of Church st, and west of Salina-st. in Syracuse, per chap. 283, Laws of 1851,	10	36,246 00
April 10, 1852. Lands lying south of Erie canal and east of West- st, in Syracuse, per chap. 270, Laws of 1851, granted to occupants,..	7	7,600 00
Feb. 1854..... Add sale to Syracuse and Utica Railroad Co., Nov. 26, 1850, sub. 5 of farm lot 253,	2.92	2,000 00
Also sale to Oswego & Syracuse Railroad, of June 1848,	4.93	739 50

	Acres.	Sold for
June 12, 1855.. Sale of lots in 5th ward, in Syracuse, lying west of Wyoming-st,.....	10	38,023 00
Dec. 16, 1856.. Sale of lots on Genesee-st, west of Plum-st, in Syra- cuse, part sold,.....	25	28,525 00
Acres,.....	<u>114.85</u>	<u>\$153,039 50</u>
114.85 acres sold for.....		\$153,039 50
543 12 acres purchased for		152,983 02
Balance,		<u>\$56 48</u>

NOTE.—The sales of the salt lands are made on the following conditions: One-fourth part of the purchase money to be paid at the time of sale, and the purchaser executes a penal obligation conditioned for the payment of the residue of the purchase money to the people of the State of New-York, in six equal annual payments with interest at the rate of six per cent per annum. In the purchase of other salt lands, the appropriations are made direct from the treasury, as an advance on the contract made from sales. The one-quarter paid in on account of sales being almost the only moneys in the treasury.

Statement of moneys expended in the purchase of other lands, &c.
1849,

	Acres.	Damages. Expenses.	Other Land.
March 17. Syracuse Salt Co. salt vats, .....	....	\$3,000 00	
Oct. 1. City of Syracuse mill pond improvement, ....	....	4,000 00	
Dec. 17. Purchase of lands, Mess. Clark & Alvord,	40	.....	\$4,800 00
" 24. Purchase of Rob't Gere, for lot No. 45,.....	22.56	.....	1,692
" 28. Purchase of H. White. for lots 39, 43, 44, and part 40	114.94	.....	9,195 20

Date.		Acres.	Expenses and damages.	Purchase of other lands.
Dec. 26.	Purchase of M. & C. Mer- rick, for lot No. 46,..	21.40	.....	\$1,605
1850,				
June 28.	Purchase of Thos. Davis, part of farm lot 340,	9	.....	1,080
1851,	Syracuse Salt Co., dam- ages, .....	.....	1,287 00	
1852,				
Feb. 9,	Syracuse Salt Co., dam- ages, .....	.....	3,000 00	
April 15.	Syracuse Salt Co., dam- ages, .....	.....	2,600 00	
June 12.	Syracuse salt vats, ....	.....	13,158 00	
1853,	Purchase of lands, J. & S. Jaquiths, for part of marsh lots 1, 2, 3 and 4,	22.79	.....	2,279 50

	Expenses Com'r's Land Office.	Appraisem'ts Surveys.	Expenses.
1850.	\$16 50	\$115 25	\$56 51
1851.		117 40	14 76
1852.	20 00	37 80	
"		256 95	
1853.	41 32	65 25	70 00
	<u>77 82</u>	<u>592 65</u>	<u>141 26</u>
			811 73
		Advertising,	121 74

933 47

1855.				
June 15.	Syracuse salt company	....	16,256 00	.....
Mar. 15.	Norton and Stevens for marsh lots 37 and 38	15	.....	9,132 00
May 23.	M. E. Lynch for marsh lots 12 and 13,	15	.....	4,000 00
do	L. G. Avery for marsh lot No, 8,	10	.....	2,000 00
do	Lorenz Becker for marsh lot No. 6, ...	15	.....	3,000 00

Date.		Acres.	Expenses and damages.	Purchase of other lands.
May 23.	B. A. Avery for re- claimed lot 42 and 15 acres, marsh lots No. 2 and 4,.....	38	.....	5,829 00
Sept. 10.	Harvey Baldwin, farm lot 290 and part 291, and subs. 1 and 2 of farm lot No. 324,..	17	.....	2,817 67
Dec. 19.	Onondaga salt comp'y 7 acres, pasture lots 4 and 5, and part of farm lot No. 327,..	25	.....	7,500 00
do	Salt sp'gs solar coarse salt company, marsh lot Nos. 32, 33 and 41; reclaimed lot No. 48 and pasture lots 1 and 2,.....	25	.....	7,500 00
do	Geo. Sanford and Byron Rice marsh lot No.10	4	.....	1,075 00
do	Wm. Brown Smith, farm lots 316, 317,.	31	.....	6,500 00
Sept. 15.	B. F. Green for surveys	....	120 50	.....
July 24.	W. Raynor & others, apprais't of land on West-st., Syracuse,	....	100 00	.....
Nov. 26.	Also on Genesee-st.,..	....	75 00	.....
27.	Syracuse Salt Comp., removing salt vats, and damages to co- vers, .....	....	13,184 00	.....
	Sales, June 12 & Dec. 25, '55, advertising,	....	97 41	.....
	do expenses,.....	....	28 00	.....
Nov. 23.	T. D. Barton, increased com'sation for abate- ment of nuisance at Syracuse, .....	....	1,200 00	.....

		Acres.	Expenses and damages.	Purchase of other lands.
Dec. 22.	J. Hughes, for placing stone monuments at Syracuse, .....	....	27 00	.....
	B. F. Green, for sur- veys of same, .....	....	58 00	.....
	Due treasury on obli- gors bonds for the original purchase of secs. 1 & 2 of fm. lot No. 324, assigned by H. Baldwin to the State in Sept., 1855. Int. May 1, 1856,...	....	225 42	.....
	Do on farm lot No. 290,	....	410 34	.....
	Due H. Baldwin on his sale in Sept., 1855, ..	....	63 51	.....
1856				
Feb. 12.	B. F. Green, for sur'ys,	....	22 00	.....
June	Expenses Commis'ers of Land Office, ....	....	85 00	.....
Dec. 16.	Sale of lots on Genesee street, advertising, ..	....	33 00	.....
	Expenses of sale, ....	....	14 00	.....
March 20.	G. F. Comstock & B. D. Noxon, farm lots 318, 319, 320, 321 & part of lot No. 295,	60	.....	14,500 00
June 10.	West'n Coarse Salt Co., two pieces of land,	22.50	.....	2,500 00
	W. & D. Kirkpatrick, part fm. lots 47 & 50,	15	.....	1,500 00
	W. Winton & H. Stew- art, part of farm lots 291, 292, 293,	18.40	.....	4,500 00
			543.12	\$59,977 65
				\$93,005 37
				\$152,983 02

STATEMENT D.

Bridge Companies incorporated pursuant to chapter 259, Laws of 1848.

REPORT FOR THE YEAR 1855.

ARTICLES OF ASSOCIATION.	When filed.	Town.	County.	Report of 1855.	Received.
Apalachia Bridge Company,	Sept. 23, 1848, ..	Owego,	Tioga, .....	.....	Feb. 4, 1856.
Barryville and Shoholu Suspension Bridge Company,	July 5, 1854, ..	Barryville,	Sullivan, .....	.....	Jan. 10, 1856.
Centreville Bridge Company,	Aug. 4, 1848, ..	Colesville,	Broome, .....	.....	Feb. 4, 1856.
Corbetteville Bridge Company,	Mar. 16, 1849, ..	Conklin,	Broome, .....	.....	No report.
Conklin Bridge Company,	April 21, 1849, ..	Conklin,	Broome, .....	.....	Jan. 12, 1856.
Chemung River Bridge Company, (below upper narrows,)	Jan. 7, 1849, ..	Chemung,	Chemung, .....	.....	No report.
Corinth and Luzerne Bridge Company,	Nov. 14, 1850, ..	Corinth,	Saratoga, .....	.....	Jan. 21, 1856.
Chemung Valley Bridge Company,	Jan. 21, 1852, ..	Chemung,	Chemung, .....	.....	Jan. 23, 1856.
Deposit Bridge Company,	Nov. 17, 1848, ..	Deposit,	Delaware, .....	.....	No report.
Elmira Main-street Bridge Company,	Jan. 1, 1852, ..	Elmira,	Chemung,	Report in 1854.	No report.
Freeman's Bridge Company,	Dec. 23, 1848, ..	Glenville, ..	Schenectady, ..	.....	Jan. 24, 1856.
Port Hunter and Tribes Hill Bridge Company,	Jan. 24, 1849, ..	Mohawk & Florida	Herkimer,	Destroyed in '50.	.....
Half-moon Bridge Company,	Jan. 22, 1850, ..	Half Moon,	Saratoga, .....	.....	Jan. 30, 1856.
Hoosic Mouth Bridge Company, .....	.....	Schaghticoke, ..	Rensselaer, .....	.....	No report.
Lumbermen's Bridge Company,	Mar. 19, 1850, ..	Big Flats,	Chemung, .....	.....	Mar. 13, 1856.
Lisle and Chenango Bridge Company,	Nov. 11, 1851, ..	Barker,	Broome, .....	.....	Jan. 22, 1856.
Pittstown Bridge Company,	None.	Pittstown,	Rensselaer, .....	.....	Jan. 12, 1856.
South Bainbridge Bridge Company,	Dec. 23, 1848, ..	Bainbridge,	Chenango, .....	.....	Jan. 17, 1856.
Susquehanna Bridge Company,	Sept. 3, 1852, ..	Windsor,	Broome, .....	.....	Feb. 4, 1856.
St. Johnsville and Minden Bridge Company,	Dec. 22, 1852, ..	St. Johnsville, ..	Montgomery, .....	.....	No report.
Sidney Bridge Company,	Jan. 10, 1853, ..	Sidney,	Delaware, .....	.....	No report.
Union and Vestal Bridge Company,	Sept. 27, 1849, ..	Union,	Broome, .....	.....	No report.
Unadilla Bridge Company,	Sept. 9, 1853, ..	Unadilla,	Otsego, .....	.....	No report.
Willshburgh Bridge Company,	Dec. 25, 1851, ..	Willshburgh, ..	Chemung, .....	.....	Jan. 21, 1856.

STATEMENT D.—(CONTINUED.)

ARTICLES OF ASSOCIATION.	Cost of bridge	Amount expended.	Capital.	Amount paid in.	Rec'd for tolls during 1855.	Rec'd from other sources	Dividends.	Indebtedness for constr'n.
Apolachia Bridge Company,.....			\$8,000 00	\$6,000 00	\$373 88		None.	\$198 88
Barryville and Shoholu Suspension Bridge Company, ..	\$9,000 00	\$9,000 00	7,000 00	5,300 00	239 79		None.	3,700 00
Centreville Bridge Company,.....	3,734 00	3,734 00	3,000 00		401 39			
Corbetta's Bridge Company,								
Conklin Bridge Company,.....			3,500 00	3,500 00	445 43			155 25
Chemung River Bridge Co., (below upper narrows,)..								
Corinth and Luzerne Bridge Company,	4,000 00	3,700 00	3,000 00	2,800 00	202 21	\$398 00	None.	390 00
Chemung Valley Bridge Company,	5,384 00	5,384 00	5,000 00	4,725 00	264 92			525 00
Deposit Bridge Company,.....								
Elmira Main-street Bridge Company,								
Freeman's Bridge Company,.....	10,500 00	20,000 00	20,000 00	20,000 00	1,127 84		None.	
Fort Hunter and Tribes Hill Bridge Company,.....								
Half Moon Bridge Company,	11,355 37	12,000 00	12,000 00	12,000 00	1,814 69		\$1,380 00	None.
Hoosic Mouth Bridge Company,								
Lumbermen's Bridge Company,.....	6,875 42		6,500 00	6,500 00	648 25			
Lisle and Chenango Bridge Company,.....	2,700 00		3,000 00	2,700 00	739 40		611 78	None.
Pittstown Bridge Company,	4,852 00	4,852 00	4,852 00	4,852 00	271 00		95 20	None.
South Bainbridge Bridge Company,	3,628 57	3,628 57	3,000 00	3,175 00	703 95		508 00	
Susquehanna Bridge Company,			1,600 00	1,377 26	165 32			222 74
St. Johnsville and Minden Bridge Company,.....								
Sidney Bridge Company,.....								
Union and Vestal Bridge Company,.....								
Unadilla Bridge Company,								
Willoughby Bridge Company,.....	3,000 00	3,211 82	3,000 00	1,955 00	294 30		None.	950 00

STATEMENT E.

Reports of Companies formed to navigate the Lakes and Rivers, as required by section 24, of chapter 232, Laws of 1854-
FOR THE YEAR 1855.

NAME OF COMPANY.	The amount of capital by charter.	The amount of stock subscribed.	The amount of stock paid in.	The amount of stock paid in at the time of reporting.	The amount of floating debt of the company, and whether the same be secured by mortgage of their property.	The number of boats and the nature of the same, owned by the company.	The waters upon which they do business.
American Transportation Co.,	\$900,000	\$900,000	\$900,000 00	\$900,000 00	\$115,553 82 not secured	264 canal boats, 24 propellers.	East river, N. York bay, Hudson river, Erie canal, Niagara river, Buffalo creek, Lake Erie, Cuyahoga river, Maumee river, Detroit river, Lake St. Clair, River St. Clair, Lake Huron, Lake Michigan, Milwaukee river, and Chicago river.
Buffalo Elevating and Storing Co.,..	60,000	60,000	60,000 00	60,000 00	2,000 } no mortgage }	.....	Buffalo.
Catskill Steam Transportation Co.,..	20,000	20,000	20,000 00	20,000 00	1,107 00 sec'd by mort	1 steam boat.	Hudson river, Harbor of New-York, and Catskill.
Northern Transportation Co.,.....	300,000	300,000	300,000 00	300,000 00	None.	14 steam propellers.	The River St. Lawrence, Lake Ontario, Erie, St. Clair, Michigan, with the waters connected therewith.

FOR THE YEAR 1856.

American Transportation Co.,	\$900,000	\$900,000	\$900,000 00	\$900,000 00	\$143,520 97 not secured.	202 canal & river boats, 19 propellers, 1 steam tug.	East river, Hudson river, Erie canal, Niagara river, Lake Erie, Detroit river, Lake St. Clair, River St. Clair, Lake Huron, and Lake Michigan,
Blanchard Steamboat Co.,.....	25,000	25,000	22,243 13	22,243 13	7,000 00 not secured.	1 steamboat, not finished.	

STATEMENT E—(CONTINUED.)

NAME OF COMPANY.	The amount of capital by charter.	The amount of stock subscribed.	The amount of stock paid in.	The amount of stock paid in at the time of reporting.	The amount of floating debt of the company, and whether the same be secured by mortgage of their property.	The number of boats and the nature of the same, owned by the company.	The waters upon which they do business.
Black River Steamboat Co.,.....	10,000	10,000	7,200 00	7,200 00	4,350 00 not secured.	1 steamboat.	Black river, and between the High falls, Lewis Co., and the village of Carthage.
Buffalo Elevating and Storing Co.,..	60,000	60,000	60,000 00	60,000 00	33,000 00 not secured.	.....	Buffalo Harbor.
Catskill Steam Transportation Co.,..	20,000	20,000	20,000 00	20,000 00	22,657 04 not secured.	1 steamboat.	.....
Harlem and N. York Navigation Co.,	18,000	16,610	13,742 50	13,742 50	5,276 93 not secured.	1 steamboat.	East and Harlem rivers.
Hudson River Steamboat Co.,.....	20,000	20,000	20,000 00	20,000 00	None.	None.	Hudson river.
Lake Erie Transportation Co.,.	100,000	87,000	87,000 00	.....	2,941 06 2 not secured.	2 steamboats, 1 propeller.	Buffalo Creek, Lake Erie, Cuyahoga river, Sandusky bay, Maumee river, Detroit river.
Lake Navigation Company,	1,000,000	1,000,000	971,900 00	.....	89,883 53 3 barques, 9 brigs, 55 schooners, 4 steam tugs.	14 steam propellers.	Lakes Erie, Ontario, St. Clair, Huron, and Michigan, and rivers Detroit and St. Clair.
Northern Transportation Co.,	300,000	300,000	300,000 00	300,000 00	14,977 11 14 not secured.	13 steam propellers, 2 sail vessels, 239 canal boats.	The River St. Lawrence, Lakes Ontario, Erie, St. Clair, Huron, Michigan, and the waters connected therewith.
Western Transportation Co.,	900,000	840,500	838,975 00	838,975 00	62,435 99 not secured.	.....	East river, New-York bay, Hudson river, Erie canal, Tonawanda creek, Niagara river, Buffalo creek, Lake Erie, Cuyahoga river, Maumee river, Detroit river, Lake St. Clair, River St. Clair, Lake Huron, Lake Michigan, Milwaukee river, and Chicago river.

STATEMENT E.—(CONTINUED.)

FOR THE YEAR 1855.

NAME OF COMPANY.	The average number of men employed by the company during the year.	The gross receipts of the year for freight.	The gross receipts from other sources.	Dividends on stock, amount and rate per cent.	Amount paid for damages to, or for loss of freight.	Amount paid for new moving stock, including all expenditures for the purchase of new outfits for the business of the company.	The amount charged to depreciation of their property used in the business of transportation.	The place of the principal office of the company.	Date of filing report.
American Transportation Co.,.....	1,576	\$1,742,132 25	\$46,127 84	10 per cent.	\$24,396 37	\$129,400 00	\$70,890 73	Buffalo,.....	January 14, 1856.
Buffalo Elevating and Storing Co.,.....	.....	.....	20,000 00	11 per cent.	.....	6,300 00	.....	Buffalo,.....	Feb'y 11, 1856.
Catskill Steam Transportation Co.,.....	21	6,444 94	23,656 35	None.	12 00	.....	.....	Catskill,.....	January 21, 1856.
Northern Transportation Co.,.....	283	403,707 47	25,497 90	25 per cent.	1,537 33	300,000 00	Nothing.	Ogdensburg, ...	January 12, 1856.

FOR THE YEAR 1856.

American Transportation Co.,.....	1,587	\$1,393,478 19	\$17,432 43	\$180,000 00	\$5,988 58	\$44,084 09	\$106,068 52	Buffalo,.....	January 16, 1857.
Blanchard Steamboat Co.,.....	2	None.	.....	.....	.....	.....	.....	52 South-st. N.Y.	January 9, 1857.
Black River Steamboat Co.,.....	7	501 66	70 26	None.	None.	11,750 00	Nothing.	Lyons Falls, ...	January 14, 1857.
Buffalo Elevating and Storing Co.,.....	10	.....	25,000 00	None.	.....	30,000 00	.....	Buffalo,.....	January 16, 1857.
Catskill Steam Transportation Co.,.....	21	7,455 61	18,308 05	None.	3 00	22,707 01	None.	Catskill,.....	January 15, 1857.
Harlem and New-York Navigation Co.,	10	202 85	986 64	None.	None.	18,000 00	.....	Harlem,.....	January 9, 1857.
Hudson River Steamboat Co.,.....	35	18,874 92	588 73	None.	1,023 12	None.	None.	Albany,.....	January 16, 1857.
Lake Erie Transportation Co.,.....	80	78,910 99	840 09	None.	2,853 20	3,538 86	8,700 00	Buffalo,.....	January 16, 1857.
Lake Navigation Company,.....	670	559,700 13	.....	10 per cent.	14,351 31	1,073,425 00	.....	Buffalo,.....	January 13, 1857.
Northern Transportation Co.,.....	284	381,818 21	21,893 69	15 per cent.	7,666 48	46,224 99	25,600 00	Ogdensburg, ...	January 14, 1857.
Western Transportation Co.,.....	1,600	1,596,773 19	15,191 29	150,508 00	35,414 97	924,441 72	85,146 44	Tonawanda,....	January 16, 1857.

I N D E X.

	Pages.
Communciation of the State Engineer to the Legislature, in reply to a resolution enquiring the amount which will be required for the completion of each of the works provided for by sec. 3, art. 7 of the Constitution, as answered,	1, 2
His annual report,	3
Report,	3-23
Engineering department,	3-12
Organization of the engineer department,	3-11
Expenditures of the engineer department,	11-12
Annual cost of engineering since 1st of January, 1854, and the percentage of engineering expenses on the whole amount done in each year since that date, ...	12
The present condition and estimated cost of the works authorized and supposed to be provided for by the amendment to the Constitution, adopted on the 14th of February, 1854,	12-15
Estimated cost of all the canals from and after Dec. 31, 1853,	13-14
Estimated cost after Dec. 31, 1856,	14
Total estimated expenditure subsequent to Jan. 1, 1837,	14
Deficiency in means provided by the Constitution for completing the works therein authorized,	15-18
Management of the canals,	18-22
Land department,	22, 23

DOCUMENTS ACCOMPANYING REPORT OF THE STATE ENGINEER.

Eastern Division.

Report of J. P. Goodsell, division engineer,	27-72
Canals embraced in the division,	27
Subdivision and resident engineer,	27, 28
Expenditures for engineering from Jan. 1st, 1856,	28
Statement showing the number of persons employed in the engineering department on this division on the 31st day of Dec., 1856,	29
Estimated cost to complete the eastern division of New-York State canals, exclusive of land damages,	37-39
Comparative summary for eastern division,	39
Names, compensation, &c., of engineers employed on each residency during the year 1856,	40-47
Abstract of expenditures by resident engineers,	57
Table No. 1.—Summary of engineering expenses,	58
Statement showing the ratio of engineering expenses to the whole amount of work done on the eastern division for the year 1856,	59
Table No. 2.—Work under existing contracts let prior to the passage of act, chap. 329, Laws of 1854,	60-61
Table No. 3.—Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,	62-67
Summary of work, enlargement of the Erie canal,	68
Summary of work on Champlain canal,	69
Summary of work on Black River canal and improvement of Black river,	70
Table No. 4.—Abstract of materials delivered and estimated to contractors on the eastern division,	71
Canal and structures, eastern division of Erie canal,	72

Middle Division.

	Pages.
Report of O. C. Hartwell, division engineer,.....	73-123
Canals and river improvement embraced in the division,.....	73
Subdivisions and resident engineers,.....	74, 75
Statement showing the number of persons employed in the engineer department on this division on the 31st of Dec., 1856,.....	75
Expenditures on the Middle Division for the year 1856,.....	76, 77
Amount of work done since January 1st, 1854,.....	77, 78
Estimated cost of work not under contract,.....	78
Estimated cost of completing work under contract,.....	79
Total to complete Middle Division,.....	79
Table No. 1.—Names, compensation, &c., of engineers employed on each residency during the year 1856,.....	89-100
Summary of engineering,.....	101
Table No. 2.—Work under contracts existing prior to the passage of act, chap. 329,	
Table No. 3.—Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,.....	108-120
Laws of 1854,.....	102-107
Table No. 4.—Work on which contracts have been completed and cancelled, let in pursuance of act, chap. 329, Laws of 1854,.....	121-123

Western Division.

Report of John D. Fay, division engineer,.....	124-198
Canals embraced in this division, subdivisions into residencies,.....	124-225
Number of persons employed in the engineer department on the 31st Dec., 1856,...	126
Total expenditure of the engineer department,.....	127
The whole amount of work done in 1856,.....	127
Work abandoned,.....	129, 130
Abstract showing the estimated cost to complete the Western Division of the enlargement of the Erie canal, Erie canal repairs, and the Genesee Valley canal. Amount of work done in 1856; whole amount done, and amount remaining to be done,.....	131-133
Estimated cost of all work done; amount done and remaining to be done; percentage retained previous to Dec. 31st, 1856, and estimated cost to complete the work,.....	134-136
Comparison with estimate of last year,.....	137
Condition of work and general remarks,.....	138-150
Table No. 1.—Names, compensation, &c., of engineers employed on each residency during the year 1856,.....	151-169
Table No. 2.—Work under contract let prior to passage of act, chap. 329, Laws of 1854,.....	170-175
Table No. 3.—Work under existing contracts let in pursuance of act, chap. 329, Laws of 1854,.....	176-188
Table No. 4.—Work not under contract,.....	189
do 5.—Repairs of Erie canal,.....	190
do 6.—Probable condition of the enlargement of Erie canal on opening of navigation in the spring of 1857,.....	191-194
do 7.—Estimate of the probable amount of money required to be expended, &c., on the Western Division between May 1st and Dec. 31st, 1857,.....	194-198

Land Department.

Lands sold during the year,.....	199
Lands now belonging to the State,.....	199
Patents issued,.....	199
Mode of selling the lands of the State,.....	200
Lands sold to the Sacketts Harbor & Saratoga Railroad Co.,.....	202
Agreement with do do.....	203
Salt lands sold since 1846,.....	203
do purchase of other salt lands,.....	203
Reports received from bridge companies under chap. 259, Laws of 1848,.....	203, 204
do from companies navigating lakes and rivers under sec. 24, chap. 232, Laws of 1854,.....	204
Map and atlas of the State,.....	205



626

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1856

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